UNIVERSITY OF EDUCATION, WINNEBA

THE EFFECT OF MINDFULNESS-BASED COGNITIVE BEHAVIORAL THERAPY ON ANXIETY IN EMERGING ADULTS

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DECLARATION

Student's Declaration

I, GIFTY SEKYI-BREMANSU declare that this thesis, with the exception of quotations and references contained in published works, which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

Signature: ……

Date: ……

Supervisor's Declaration

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of thesis as laid down by the University of Education, Winneba.

Supervisor's Name: Hannah E. Acquaye, PhD

Signature: ……

Date: ……

DEDICATION

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Additionally, I want to express my gratitude to all of my instructors in the Department of Counseling Psychology for helping me finish the graduate program. Finally, may your efforts be appropriately rewarded for all who made contributions to this thesis in various ways.

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GLOSSARY

ACT	:	Acceptance and Commitment Therapy
BAI	:	Beck's Anxiety Inventory
CBT	:	Cognitive Behavioral Therapy
DSM	:	Diagnostic and Statistical Manual of Mental Disorders
MAAS	:	Mindfulness Attention Awareness Scale
MBCBT	:	Mindfulness Based Cognitive Behavioral Therapy
REBT	:	Rational Emotive Behavioral Therapy
SESSION	:	A term used by psychologists to describe a therapeutic contact with client(s).
SFBT	:	Solution Focused Brief Therapy
WATS	:	Worry and Tension Scale

ABSTRACT

Anxiety is a psychological disorder characterized by worry, fear, and feelings of tension. While most people experience symptoms of anxiety, these symptoms are short-lived and related to an event. Because of the debilitating effects of anxiety, especially on emerging adults, multiple modalities have been developed to reduce or eliminate the effects. Mindfulness-Based Cognitive Behavioral Therapies (MB-CBT) have been reported as an effective non-pharmaceutical alternative to the treatment of anxiety-based symptoms in many clients. The study used a quantitative approach, specifically a pre-test post-test experimental design. At pre-test, those in the experimental group (M = 34.89; SD = 9.96) had higher anxiety scores than those in the wait-list group (M = 29.62; SD = 8.89). At post-test, however, anxiety levels of those in the experimental group had dropped (M = 24.45; SD = 11.87) more than those in the wait-list group (M = 35.93; SD = 8.40). Furthermore, at pre-test, participants' experiences in mindfulness were not statistically significantly different (p = .14; $M_{waitlist}$ = 56.57; SD = 14.78; $M_{experimental}$ = 51.44; SD = 13.14). At post-test, however, there were statistically significant differences in mindfulness. Participants in the experimental group had higher mindfulness scores (M = 65.83; SD = 16.63) than those in the waitlist group (M = 49.57; SD = 13.69). This is good news for both counselling psychologists and the nation. For counselling psychologists, there is hope that with the right training of clients in terms of being intentionally mindful, they will have the ability to reduce their anxiety levels.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Anxiety is a common mental health condition that affects people at all stages of life development. Worrying, fear, stress, and in the worst instance, depression, are linked traits. In the event that it turns out to be a disorder, it has a very negative impact on the person. With its related shifts and decision-making, the emerging adult period, which plays a significant role in the socioeconomic growth of every country, is not immune to the negative effects of anxiety. Over the years, a number of therapies, including Solution Focused Brief Therapy (SFBT; Jones-Smith, 2016), Rational Emotive Therapy (REBT), and medication, have been examined with varying degrees of effectiveness to treat the effects of anxiety on the emerging adult. A particularly effective treatment option in recent years has been mindfulness-based therapy. This study seeks to test the effectiveness of the Mindfulness-Based Cognitive Behavioral Therapy (MBCBT) as an intervention for the treatment of anxiety among emerging adults. This chapter, in attempt to find answers to the questions, situates the work in a 'background to the study', then identifies the problem in 'statement of the problem'. Thereafter, the objectives of the study are explored, hypotheses stated, significance of the study explored, and the limitations that provided a boundary for the work are also explored.

1.1 Background to the Study

Anxiety is a common emotion that affects all categories of people in the life course. It is a mental health state characterized by feelings of worry and fear that are

strong enough to interfere with one's daily activities (American Psychiatric Association, [APA], 2013). It expresses itself in the feelings of tension, worried thoughts, and physical changes like increased blood pressure. It is considered one of the most common classes of mental disorders (United States Department of Health and Human Services, 2018, 2020; WHO, 2020). People with anxiety disorders usually have recurring intrusive thoughts or concerns. According to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders, (DSM-5; APA, 2013), anxiety disorders include disorders that share features of excessive fear and anxiety and related behavioral disturbances (2019). Individuals who suffer from anxiety may avoid certain situations out of worry. They may also have physical symptoms such as sweating, trembling, dizziness, or a rapid heartbeat. An estimated 40million adults in the US suffer from an anxiety disorder (Anxiety & Depression Association of America, 2021). Also, about 33.7% of the world population also suffer from anxiety (Bandelow & Michaelis, 2015).

In a longitudinal study on mental disorders and services assessed by Ghanaians from 2018 to 2021, Prof. Akwasi Osei, the Chief Executive for the Mental Health Authority indicated that 25.2% of the people who assessed mental health services presented with depression; 53.3% with anxiety, 9.7% with stress; and 8.3% presented with all three – depression, anxiety, and stress (see Osei, 2022; Amu et al., 2021). These numbers are those who are reported; anecdotal reports indicate that most mental health disorders in Ghana are stigmatized, and thus, till it becomes an emergency beyond the capabilities of praying centers and the homes, clients would hardly report these at the medical or mental health facilities.

Anxiety disorders are reported to be very common among women and young people (e.g., teens). While many teens are reported to struggle with anxiety more than

other life stages, those in the late teens have higher percentages (32.3%) than those in the middle teens (32.1%) and those in early teens (31.4%) (Hull, 2022). Also, anxiety prevalence has been reported to be higher for females (23.4%) than for males (14.3%). These anxiety disorders impair people's abilities to function effectively.

Emerging adulthood is a very distinct stage in the life course of human development. It is the period between late adolescence and mid-twenties (18-25 years). The developmental period called emerging adulthood is similar to those early ideas of Erikson (1958, 1963). It has been described as a time when individuals experience a number of changes at the biological, social, personal, and cultural level (Arnett, 2000, 2007, 2010). Arnett posited that this phase of development occurred from late adolescence to mid-twenties (18-25 years). Individuals in this age range need special attention because they are being considered adolescents and are being given complete "credit" of being an adult.

Changing societal norms regarding marriage and parenthood have extended the historically "traditional" period of adolescence. According to this model (Arnett, 2000, 2007), individuals are making transitions and exploring various areas in their lives at this time such as, the decision of where to live, (e.g., with parents; with friends, with romantic partner or alone). A few more areas which the emerging adults explore during this transition includes the decision of choosing a field of study during college or the "right" career path, the decision of choosing a life partner, having your own political views and world views. Having mentioned all the exploration and excitement of this phase, Arnett also mentions that these changes also lead to negative mental health outcomes. Exploration in love, work and worldviews can lead to disappointments and rejections. Challenging your childhood belief systems can be stressful too. Rejections and disappointments can also lead to risky behaviour like

unprotected sex, indulging into substance use, risky driving behaviour etc. (Arnett, 2000). Pharo, Sim, Graham, Gross and Hayne (2011) state that the risk of death is two to three times higher in adolescence than at a younger age.

During the process, the young person experiences a considerable amount of change and instability while sorting through various possibilities in love and work in the course of establishing a life structure. Anxiety is very common at this stage of life course and if it is not managed well it can lead to disorder which may be detrimental to the individual and society. This stage is characterised by various types of anxiety such as separation anxiety disorder, selective mutism, specific phobia, social anxiety disorder, panic disorder. Anxiety among emerging adults have a very devastating effect which requires appropriate intervention. According to the World Health Organisation (2021), about 40 million adults in the United States aged 18 years and older struggle with anxiety disorders, the most common mental illness in the United States.

Many therapists have used CBT as first-line intervention and up to 21% of patients do not complete treatment and about 35% do not benefit sufficiently (Taylor et al., 2014). There are various interventions in managing anxiety in the emerging adults with non-pharmacotherapy options such as CBT, REBT, SFBT and pharmacotherapy. Mindfulness or observing experiences without becoming emotionally aroused or passing judgement has been associated with reduction in anxiety (Kabat-Zinn, 1982, 1990). The basic premise underlying mindfulness practices is that experiencing the present moment nonjudgmentally and openly can effectively counter the effects of stressors, in the sense that excessive orientation toward the past or future when dealing with stressors can be related to feelings of depression and anxiety (Kabat-Zinn, 2003). In recent years, therapist have resorted to

the use of mindfulness-based CBT as an alternative intervention in the management of anxiety among children, adolescent, and adults.

Mindfulness-Based Cognitive Behavioral Therapy (MBCBT) was developed by Segal and colleagues in 2002. The aim of MBCBT is for an individual to gain freedom from automatic reactions to thoughts, feelings, and events that trigger fear and worrying. It emphasizes accepting thoughts and feelings without judgment. The skills taught in MBCBT aim to help participants identify and accept negative thought patterns and respond in intentional ways. In MBCBT, a person accepts and welcomes tensions, stress, and pain, as well as disturbing emotions such as fear, anger, and feelings of unworthiness. MBCBT includes cognitive therapy and mindfulness skills. It consists of teaching participants various stress management techniques, including relaxation, yoga, and self-care techniques, in a systematic way. MBCBT also uses meditation practice to increase attention and awareness. Participants who undergo, MBCBT are encouraged to use “mind management skills” like breathing and bodily sensations to diminish goal-oriented thinking (conceptualizing of mind) in which emotions are experienced without awareness.

Mindfulness-based interventions are rated among the most promising interventions for anxiety in children, adolescents, and older adults (Hazlett-Stevens, Singer, & Chong, 2019; Piet, Hougaard, Heckshner, & Rosenberg, 2010). Furthermore, mindfulness-based interventions have been reported to be effective for clients in individual and group counselling (Piet et al., 2010) Mindfulness-based cognitive therapy has been reported to help with neural functioning in both adolescents and adults (Strawn et al., 2016). Although evidence for the benefits of mindfulness is accumulating, the mechanisms through which it affects anxiety among emerging adults in Ghana with an adult population of 18.1% are as yet barely

explored. It is an important avenue for research to elucidate these mechanisms as such findings can inform the development and optimization of treatment. This study is geared towards exploring the efficacy of an eight-session mindfulness-based CBT in reducing anxiety among the emerging adults.

1.2 Statement of the Problem

Research indicates that anxiety affects more young people than older, as well as more females than males. The emerging adulthood stage appears to be a prominent stage in human development, because youth are described as the future of any nation. Thus, it is needful to assess if anything will prove debilitating enough to limit their ability to function effectively, thereby making it difficult, if not impossible to develop the future of nations.

Additionally, the research community recommends that research in the global south be increased and improved to make their 'voices' heard. So far, most mindfulness-based research connected with anxiety have been conducted in advanced countries, and with participants of Euro-American descent. Those studies that have been undertaken in the global south have either been cross-sectional or qualitative. Thus, the results of these studies have been relatively subjective and/or a point in time and not longitudinal. For the studies that have used experimental designs, samples have consisted of African Americans living in advanced countries (Semple, 2010; Semple et al., 2010). Studies in Africa that explore anxiety in adults focus on cross-sectional studies using other theoretical-based interventions like REBT. As far as I know, no study has been conducted in sub-Saharan Africa that has tested the effect of mindfulness-based CBT on emerging adults who present with anxiety-based disorders. This study, therefore, hopes to contribute to knowledge by identifying if MBCBT can reduce anxiety symptoms in Ghanaian emerging adults. The study will

hopefully be able to also provide a cross-cultural validation for mindfulness-based interventions and provide other avenues of helping clients in Ghana beyond 'talk' therapy and medication.

1.3 Purpose of the Study

The study's purpose was to assess anxiety and mindfulness symptoms in a group of emerging adults. Another purpose was to assess the perception of emerging adults on the effectiveness of an 8-session mindfulness-based intervention in reducing anxiety symptoms. Specifically, the study sought to understand how effective an 8-session MBCBT would be in reducing anxiety symptoms of emerging adults.

1.4 Theoretical Framework

Theoretical framework of this experimental study refers to the larger assumptions in which I am working. It provides a large overarching structure of ideas that I can draw from in analyzing the phenomenon of anxiety. The study is founded on the combined theories of Erikson's Theory of Psychosocial Development (Erikson, 1950, 1958, 1963; McLeod, 2018) and Steven C. Hayes' Acceptance and Commitment Therapy (Hayes & Pierson, 2005).

According to Erikson, individual personality progresses in a preset order through eight stages of psychological and social development that ranges from childhood to adulthood (Erikson, 1950, 1958, 1963; Mcleod, 2018). When a person successfully completed one stage, it resulted in a healthy personality and the acquisition of basic virtues. When a person fails to complete a stage, there is the reduction in an ability to complete further stages which would lead to unhealthy personality. Hopefully, these stages could be resolved successfully at a later time (Timm et al., 2022).

The stages and their corresponding ages were as follows:

(a) Stage 1 (0 to 1 ½ years) – Trust vs Mistrust

(b) Stage 2 (1 ½ to 3 years) – Autonomy vs Shame

(c) Stage 3 (3 to 5 years) – Initiative vs Guilt

(d) Stage 4 (5 to 12 years) – Industry vs Inferiority

(e) Stage 5 (12 – 18 years) – Identity vs Role Confusion

(f) Stage 6 (18 to 40 years) – Intimacy vs Isolation

(g) Stage 7 (40 to 65 years) – Generativity vs Stagnation

(h) Stage 8 (65+ years) – Ego Integrity vs Despair

The stage most consistent with the concept of emerging adulthood is the sixth stage, Intimacy versus isolation. This is the stage where emerging adults desire love, lack of which could lead to isolation. Feelings of isolation and the resultant self-talk (e.g., nobody loves me; I am not wanted; I have no one) have been found to be symptoms of anxiety and depression (Diagnostic and Statistical Manual for Mental Disorders [DSM]; American Psychiatric Association, 2013).

Acceptance and Commitment Therapy (ACT), a psychotherapeutic approach built from behavioral and cognitive therapies, was Steven Hayes' attempt to help himself and clients accept themselves and their experiences instead of avoiding them or denying them. Clients are taught to recognize and accept that some feelings are apt responses to some situations, thus, in accepting these deeper feelings, clients are empowered to make the necessary changes in behavior irrespective of what is happening in their lives or how their feelings 'tell' them to behave. ACT in a way, helps clients understand that negative human emotions (e.g., anxiety) need not be fixed or managed or changed, but experienced as part of a comprehensive life

experience (Hayes & Pierson, 2005). ACT hinges on six core processes that are thought to enhance psychological flexibility. These are:

(a) acceptance – where one acknowledges and embraces the full range of thoughts and emotions;

(b) cognitive diffusion – distancing oneself from as well as changing the way one reacts to distressing thoughts and feelings;

(c) being present – being mindfully present in the moment and observing thoughts and feelings without judging them to be good or bad;

(d) self as a context – recognizing that people are more than just their thoughts, feelings and experiences, and expanding self and identity;

(e) values – instead of living to please others, choosing personal values and living by those standards; and

(f) committed action – taking concrete steps to make changes that are aligned or consistent with those personal values.

Thus, for this study, emerging adults who fall within Erikson's *intimacy versus isolation* stage, could be taught to be present, expand their self and identity, and choose their personal values. Beyond choosing their personal values, these emerging adults could be encouraged to take concrete steps aligned with their personal values in a way that helps them experience the whole range of life experiences – joys and distress – and apply mindfulness to these life experiences.

1.5 Conceptual Framework

Conceptual framework defines the relevant variables for my study and maps out how they might relate to each other (Figure 1).

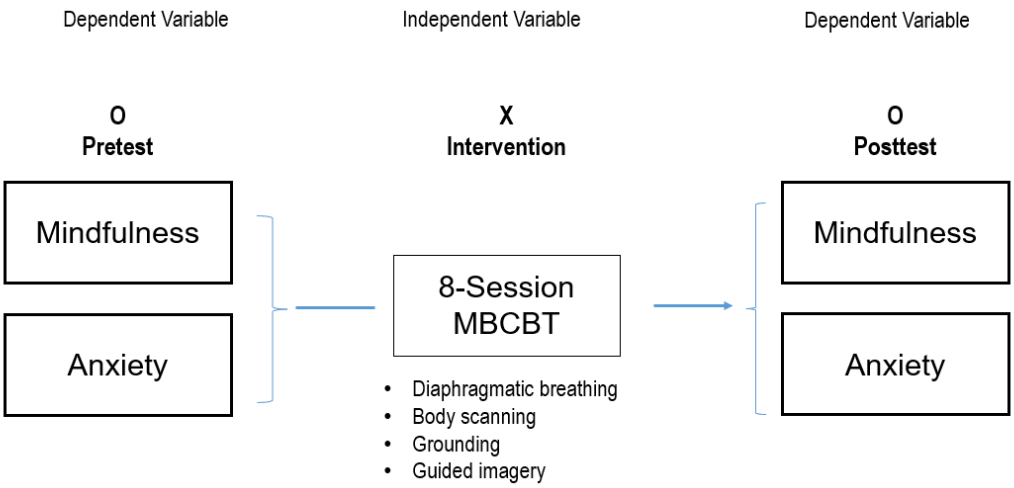

Figure 1: Conceptual framework of study variables

According to the conceptual framework, after an eight-session MBCBT, both anxiety and mindfulness levels of emerging adults will change.

1.6 Objectives of the Study

The objectives of the study were to:

(a) assess anxiety levels in emerging adults at pre-test.

(b) assess anxiety levels in emerging adults at post-test, as well as gender differences.

(c) measure mindfulness levels in emerging adults at pre-test.

(d) measure mindfulness levels in emerging adults at post-test.

1.7 Research Hypothesis

$H_0 1$ There is no statistically significant mean difference between anxiety at pre-test and anxiety at post-test in emerging adults ($\mu_{diff} = 0$).

$H_A 1$ There is a statistically significant mean difference between anxiety at pre-test and anxiety at post-test in emerging adults ($\mu_{diff} \neq 0$).

$H_0 2$ There is no statistically significant mean difference between mindfulness at pre-test and mindfulness at post-test in emerging adults ($\mu_{diff} = 0$)

H_A1 There is a statistically significant mean difference between mindfulness at pre-test and mindfulness at post-test in emerging adults ($\mu_{diff} \neq 0$)

1.8 Significance of the Study

Multiple people could benefit from the results of this study. These are (a) emerging adults; (b) counseling psychologists; (c) groups working with the youth; and (d) government. Specifically, if the results demonstrate efficacy in the use of the mindfulness modalities, emerging adults can be encouraged knowing that with as few as eight sessions, they could learn coping mechanisms to take care of themselves psychologically when they experience anxiety. Second, counseling psychologists can use these modalities to help clients in fewer sessions and with less energy spent than they generally would use in normal talk therapy. Third, groups working with youth can encourage them to use these mindfulness exercises, especially if these youth do not have access to counseling psychologists or professionals supporting their mental wellness. Finally, governments can save on some psychopharmacological drugs if they know that mindfulness could work as effectively as antidepressants and beta blockers. Thus, for governments, these monies saved on medications can be invested in other equally important social interventions.

1.9 Delimitation

The delimitations of a study are the factors and variables not to be included and type of participants included in the investigation. In other words, they are the boundaries the researcher sets in terms of study duration, population size, and sample size. This researcher restricted the experiment to only a suburb in Greater Accra which does not give a full reflection of the emerging adult population. Convenience sampling and not simple random sampling was used because the researcher is a

counsellor in an institution where the participants are her clients. A simple random sample would have been ideal to give a fair representation, but the researcher chose the convenience sampling at her convenience.

Type of participants – emerging adults in university, Vocational and Senior High Schools were used and what happens to those who have anxiety but are not in these institutions? This limits the research and hinders generalization of the findings among the population. Study duration of eight sessions (twice weekly) may be too long for some people to keep coming for the mindfulness practices and eight sessions (twice weekly) may be too short for some participants to see actual results of mindfulness in reducing anxiety symptoms.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter explores literature concerning emerging adulthood, anxiety, and mindfulness. Using these variables as search terms with Boolean effects, multiple academic digital library databases were used. Some of these databases included PsychInfo, CORE, African Digital Research Repositories, EBSCOhost, Database of African Theses and Dissertations (DATAD), and JSTOR. The literature review is grouped under the following sub-topics: (a) emerging adulthood; (b) theoretical grounding for emerging adulthood; (c) emerging adulthood in non-industrialized countries; (d) anxiety and diverse modalities to address anxiety; and (e) mindfulness and the research behind its efficacy.

2.1 Emerging Adulthood

Emerging adulthood is seen as a period when individuals experience a number of changes at the biological, social, personal, and cultural level (Arnett, 2000). Arnett posited that this phase of development occurred from late adolescence to mid-20s (18-25 years). The early ideas of Erikson (1968) are similar to the developmental period called emerging adulthood. The theory of emerging adulthood was proposed as a framework for recognizing that the transition to adulthood was now long enough that it constituted not merely a transition but a separate period of the life course. There are five features that make emerging adulthood distinct: it is the age of identity explorations, the age of instability, the self-focused age, the age of feeling in-between, and the age of possibilities (Arnett, 2007; 2010).

The emerging adulthood is perhaps the most heterogeneous period of the life course because it is the least structured, and the five features were not proposed as universal features but as features that are more common during emerging adulthood than in other periods. Emerging adulthood is found mainly in industrialized countries, where most young people obtain tertiary education and median ages of entering marriage and parenthood are around 30.

There are variations in emerging adulthood within industrialized countries. It lasts longest in Europe, and in Asian industrialized countries, the self-focused freedom of emerging adulthood is balanced by obligations to parents and by conservative views of sexuality (Arnett, 2010; Arnett, 2015). In non-industrialized countries, although today emerging adulthood exists only among the middle-class elite, it can be expected to grow in the 21st century as these countries become more affluent. Individuals in this age range need special attention because they are considered adolescents and are being given complete "credit" of being an adult. According to this model (Arnett, 2000), individuals are making transitions and exploring various areas in their lives at this time such as, the decision of where to live, (e.g., with parents; with friends, with romantic partner or alone).

A few more areas which the emerging adults explore during this transition includes the decision of choosing a field of study during college or the "right" career path, the decision of choosing a life partner, having your own political views and world views etc. Arnett further mentions that these changes also lead to negative mental health outcomes common among them being anxiety. Exploration in love, work and worldviews can lead to disappointments and rejections. Challenging your childhood belief systems can be stressful too. Rejections and disappointments can also

lead to risky behavior like unprotected sex, indulging into substance use, risky driving behavior etc. (Arnett, 2010).

2.2 Theoretical Grounding for Emerging Adulthood

The theory of emerging adulthood proposes that a new life stage has arisen between adolescence and young adulthood over the past half-century in industrialized countries (Arnett, 2000). Fifty years ago, most young people in these countries had entered stable adult roles in love and work by their late teens or early twenties. Relatively few people pursued education or training beyond secondary school, and, consequently, most young men were full-time workers by the end of their teens. Relatively few women worked in occupations outside the home, and the median marriage age for women in the United States and in most other industrialized countries in 1960 was around 20 (Arnett & Taber, 1994; Douglass, 2007). The median marriage age for men was around 22, and married couples usually had their first child about one year after their wedding day. All told, for most young people half a century ago, their teenage adolescence led quickly and directly to stable adult roles in love and work by their late teens or early twenties. These roles would form the structure of their adult lives for decades to come. Now all that has changed.

A higher proportion of young people than ever before about 70% in the United States—pursue education and training beyond secondary school (National Center for Education Statistics, 2012). The early twenties are not a time of entering stable adult work but a time of immense job instability: In the United States, the average number of job changes from ages 20 to 29 is seven. According to the Pew Research Center (2022), the median age of entering marriage in the United States is now 27 for women and 29 for men. Consequently, a new stage of the life span, emerging adulthood, has

been created, lasting from the late teens through the mid-twenties, roughly ages 18 to 25.

Important theoretical contributions to the understanding of development from the late teens through the twenties have been made by various theorists. One early contribution was made by Erik Erikson (1950, 1968). Erikson rarely discussed specific ages in his writings, and in his theory of human development across the life course he did not include a separate stage that could be considered comparable to emerging adulthood as proposed here. Rather, he wrote of development in adolescence and of development in young adulthood. Nonetheless, he also commented on the prolonged adolescence typical of industrialized societies and on the psychosocial moratorium granted to young people in such societies 'during which the young adult through free role experimentation may find a niche in some section of his society' (Erikson, 1968). Thus, Erikson seems to have distinguished – without naming – a period that is in some ways adolescence and in some ways young adulthood yet not strictly either one, a period in which adult commitments and responsibilities are delayed while the role experimentation that began in adolescence continues and in fact intensifies.

Daniel Levinson (1978) also contributed theoretically to the work of emerging adults. Levinson interviewed men at midlife, but he had them describe their earlier years as well, and on the basis of their accounts he developed a theory that included development in the late teens and the twenties. He called ages 17-33 the 'novice phase of development' and argued that the deciding task of this phase is to move into the adult world and build a stable life structure. During this process, according to Levinson, the young person experiences a considerable amount of change and instability while sorting through various possibilities in love and work in the course of

establishing a life structure. Levinson acknowledged that his conception of the novice phase was similar to Erikson's ideas about the role experimentation that takes place during the psychosocial moratorium (Levinson, 1978).

Between adolescence and young adulthood, Erikson and Levinson, as well as Keniston (1971) defined youth as a time of ongoing role exploration. However, Keniston wrote during a period when very visible student groups against American engagement in the Vietnam War were roiling American society and several Western European cultures. Instead of reflecting any abiding sentiment, his depiction of youth as a period of 'tension between self and society' and 'refusal of socialization' (Keniston, 1971) represents that historical juncture.

Youth has a long history in the English language as a term for childhood generally and for what later became called adolescence (e.g., Ben-Amos & Ben-Amos, 1994), and it continues to be used popularly and by many social scientists for these purposes (as reflected in terms such as youth organizations). Keniston's choice of the ambiguous and confusing term youth may explain in part why the idea of the late teens and twenties as a separate period of life never became widely accepted by developmental scientists after his articulation of it. However, there is good empirical support for conceiving this period--proposed here as emerging adulthood--as a distinct period of life.

2.3 Emerging Adulthood in Non-Industrialized Countries

Emerging adulthood is well established as a normative life stage in the industrialized countries described thus far, but it is still growing in non-industrialized countries (Arnett, 2010; Tanner & Arnett, 2016). Demographically, in non-industrialized countries as in Organization for Economic Co-operation and Development (OECD) countries, the median ages for entering marriage and

parenthood have been rising in recent decades, and an increasing proportion of young people have obtained post-secondary education (Tanner & Arnett, 2016). Nevertheless, currently it is only a minority of young people in non-industrialized countries who experience anything resembling emerging adulthood. The majority of the population still marries around age 20 and has long finished education by the late teens.

For young people in non-industrialized countries, emerging adulthood exists only for the wealthier segment of society, mainly the urban middle class, whereas the rural and urban poor—the majority of the population—have no emerging adulthood and may even have no adolescence because they enter adult-like work at an early age and also begin marriage and parenthood relatively early (Darlington et al., 2022). What Saraswathi and Larson (2002) observed about adolescence applies to emerging adulthood as well. They admit that middle class youth in India, Europe, and Southeast Asia have more in common with one another than with the poor of their own individual countries. However, as globalization proceeds, and economic development along with it, the proportion of young people who experience emerging adulthood will increase as the middle class expands. By the end of the 21st century, emerging adulthood is likely to be normative worldwide.

2.4 Strengths in Emerging Adulthood

During emerging adulthood, personal goals related to education or friendships are replaced by work-related, family or health-related goals. This change reflects the developmental tasks of emerging adulthood as well as the transition of roles. Recent findings have confirmed that successful entry into adulthood and adaptation for adult roles depends on the ability to achieve specified normative developmental goals in emerging adulthood (Negru, 2012).

Given the current trend of transferring adult social roles and fulfilling socially anticipated developmental challenges to old age (e.g., Arnett, 2015; Galanaki & Leontopoulou, 2017), this stage of life becomes important in shaping the future of an adult. In order to achieve the goals, they should be able to apply self-regulatory processes (Arnett, 2015) in the form of suppressing behavioural tendencies that do not achieve the goal, the ability to overcome obstacles or the ability to decide. This is crucial as this age is considered to be one of the most critical normative life transitions and the issue of managing transitions and overcoming obstacles becomes very relevant during this period.

At the same time, this raises an interest in answering questions about the specifics of self-regulation as a process of setting and achieving goals in young people (Walker & Iverson, 2016). Young people have a large need for exploration and experimentation. This is reflected in the tendency to plan the postponement of development goals or the issue of frozen goals (an individual has decided on a given goal and feels committed to carrying out the goal but postpones implementation to another time (Arnett, 2015).

Wood, Crapnell, Lau, Bennett, Lotstein, Ferris and Kuo (2018) consider emerging adulthood as a critical period in the course of life development. The authors take a biopsychosocial approach by including brain development as an important variable since many higher-order executive functions are still developing during emerging adulthood. As the brain develops, the emerging adult is enabled to delay gratification, better understand the impact of the external and internal environment and develop better problem-solving skills. The emerging adult also gains the ability to form meaningful social and personal relationships. Wood and colleagues (2017) posit that individual with adequate social, psychological, economic, and personal resources,

along with necessary adult support, are more likely to make well-educated choices and progress towards a healthy and successful adulthood. On the other hand, individuals lacking these assets may struggle in various domains of adult life.

Earlier studies appear to highlight that emerging adulthood, is a period filled with exploration and challenging tasks. The outcomes to these choices can be both positive and negative and seem to be influenced by how the emerging adults approach them. Moreover, considering that the brain is still developing during this age, it is likely to play a role in how some of these important decisions are made. Hence, it is important for us to focus on emerging adults as choices made in this period have the potential to spur major consequences. It is also important to focus on factors that affect these decisions, factors that lead the emerging adults to these decisions, and the effects of these factors on emerging adults. Above all, emerging adulthood is good for society for the fact that it allows young people an extended period that can be used for postsecondary education and training that prepares them to contribute to an information and technology-based global economy.

2.5 Growing Edges in Emerging Adulthood

An individual will encounter a variety of significant life experiences during their lifetime, some of which are motivated by biological or developmental reasons and others which are not. more sociocultural in scope. Emerging maturity is a developmental stage that includes a period with the possibility of numerous big life events (Arnett, 2015). Some of these occurrences can be smooth transitions, whilst others may be very hard for people to adapt to and cause psychological anguish.

Holmes and Rahe (1967) looked at the function of major life events as stressors and the subsequent prediction of psychological disease in people after one of these events and came up with a list of events that were most predictive of eventual

discomfort. Death was among the most significant occurrences. Homes and Rahe (1967) calculated the mean values for each of the events based on the magnitude of severity and events like death of spouse, divorce, marital separation, jail term and death of a close family member. Events like beginning or end of school, changes in school, changes in living conditions (away from parents, with romantic partners, alone) and changes in residence; all events that are more likely to occur in emerging adulthood, were rated among the top predictors of psychological distress. So, emerging adulthood may not be harmful to societies, but is it actually good for them? On the other hand, emerging adults' expectations for love and work tend to be extremely high—not just a reliable marriage partner but a "soul mate," not just a steady job but a kind of work that is an enjoyable expression of their identity and if happiness is measured by the distance between what we expect out of life and what we get, emerging adults' high expectations will be difficult for real life to match. So, it cannot be said with confidence that the existence of emerging adulthood ensures that most people in a society will be happier with their adult lives.

Furthermore, emerging adulthood is the peak age period for many behaviors most societies try to discourage, such as binge drinking, illegal drug use, and risky sexual behavior (Arnett, 2000, 2005). If people still entered adult commitments around age 20, as they did in the past, rates of risk behaviors in the 20s would undoubtedly be lower. Such behavior may be fun for emerging adults, but it can hardly be said to be good for their society.

The new life stage of emerging adulthood has spread rapidly in the past half-century and is continuing to spread. It means that young people are dependent on their parents for longer than in the past, and they take longer to become full contributing members of their societies. A substantial proportion of them have trouble sorting

through the opportunities available to them and struggle with anxiety and depression, even though most are optimistic. However, there are advantages to having this new life stage as well. By waiting until at least their late twenties to take on the full range of adult responsibilities, emerging adults are able to focus on obtaining enough education and training to prepare themselves for the demands of today's information- and technology-based economy. Also, it seems likely that if young people make crucial decisions about love and work in their late twenties or early thirties rather than their late teens and early twenties, their judgment will be more mature, and they will have a better chance of making choices that will work out well for them in the long run.

2.6 Anxiety

It is common to occasionally experience anxiety, worry, or dread, especially when such feelings are triggered by demanding, hard, or stressful circumstances. Every human being experiences these feelings as a natural biological reaction. A symptom of worry to the therapist is an overpowering sense of anxiety that can be severe and persistent even when a stressor is not present. The most common mental health problem in the United States is anxiety disorders and the third highest in many African nations (Osei, 2022; World Health Organization, 2021).

The most prevalent kind of mental illness, according to research, affects one in three persons in America at some time in their life, with blacks and other non-whites less likely to receive any mental health services (Jones et al., 2022). Excessive fear and worrying, restlessness, agitation, panic, irritability, irrational fear of danger, racing thoughts, shortness of breath or rapid breathing, problems falling or staying asleep, headache and stomachache, racing heart, insomnia, trembling, and muscle

tension are just a few symptoms that can be brought on by anxiety. The second most common mental health issue in males after drug use disorders is anxiety disorders (WHO, 2021). The United States Department of Health and Human Services' (2018; 2020) national health statistics reports that the age group between 18 and 29 years old, which corresponds to the emerging adult developmental stage, had the greatest percentage of people who reported any anxiety symptoms (21%).

Anxiety disorders can make it difficult for people to work or study, handle daily chores, and form positive relationships. They also frequently lead to significant financial hardship and intense psychological suffering. Before an anxiety-related illness is recognized and treated, people may live with it for years. It is crucial to get expert therapy right away if somebody believes they may have an anxiety issue. The effectiveness of treatment for anxiety disorders can be increased by receiving treatment as soon as possible.

2.6.1 Classification of anxiety

Everybody experiences anxiety occasionally. Few individuals can go through a week without feeling a little apprehensive or as though everything is not going to go according to plan. When we are anticipating a significant event, such as an exam or job interview, or when we sense a threat or danger, such as waking up to weird noises in the middle of the night, we may experience anxiety. However, anxiety experienced on a daily basis tends to be infrequent, moderate, and short-lived, in contrast to anxiety experienced by a person with an anxiety disorder, which is more frequent, more severe, and lasts for hours or even days.

Sadly, anxiety problems are widespread. The early detection and treatment of anxiety disorders can increase the likelihood of successful recovery. According to

Mental Health Statistics (2021), up to one in four adults have an anxiety condition at some point in their lives, with one in 10 people experiencing it recently. Although anxiety is an emotion and not a mental ailment, there are several illnesses that fall under the umbrella of anxiety disorders. These consist of:

- Generalized Anxiety Disorder (GAD): persistent anxiety in response to regular, daily events and circumstances Frequent, ongoing panic episodes are a symptom of panic disorder.
- Social Anxiety Disorder (SAD), which is characterized by acute dread and anxiety about social situations, is a type of phobia.
- Separation anxiety disorder is characterized by a severe dread of losing the significant people in your life or the ones you love.
- Other mental health diseases, such as Obsessive Compulsive Disorder (OCD), Post-Traumatic Stress Disorder (PTSD), Acute Stress Disorder (ASD), and Adjustment Disorder (AD), involve anxiety as a symptom even though they are not considered anxiety disorders by the American Psychiatric Association (2014).

2.6.2 Symptoms of anxiety

Anxiety disorders are characterized by an overabundance of dread or worry. It might be challenging to breathe, sleep, keep still, and focus when you have an anxiety problem. Depending on the type of anxiety illness you have, you may experience certain symptoms. Common signs include fear, anxiety, and panic, feelings of fear, dread, or peril. Other symptoms include sleep issues, not being able to maintain silence and quiet, cold, perspiration-filled, tingly, or numb hands or feet respiration difficulty. People have also reported experiencing breathing more swiftly and deeply

than usual (hyperventilation), heart fluttering, nausea, mouth dryness, tense muscles, lightheadedness, inability to quit thinking about a subject (rumination), and inability to pay attention.

Depending on the type of anxiety condition you have, there are different symptoms. The following symptoms are typically associated with anxiety disorders: excessive worrying, panic episodes, trouble focusing, memory issues, impatience, difficulty falling asleep, and stiff muscles. Anxiety disorders' primary symptom is excessive dread or concern (APA, 2013). It might be challenging to breathe, sleep, keep still, and focus when you have an anxiety problem. When analyzing the connection between culture and anxiety disorders, a lot of elements must be taken into account. These elements may be contextual or related to ethno-psychology or ethno-physiology.

Contextual factors are those that relate to the social environment and the norms that underpin the social structure, as opposed to ethno-physiology/ethno-psychology factors, which are those that are based on theories about bodily functions or symptoms, including psychological signs (like forgetfulness or poor concentration). In various cultures, contextual and ethno-psychological elements interact in a complicated way and are not independent from one another. The nature of psychological processes and beliefs about the biology of the human body are intimately related to psychopathology that is peculiar to a certain culture.

Based on a layperson's understanding of the heart, heart attacks, their symptoms, and risk factors for heart attacks, the dread of a heart attack is frequently connected in the United States with the catastrophic cognition experienced during a panic. Similar to this, other social and cultural groups also display mental illnesses in accordance with their own conceptions of how the human body works. When

compared to Western medicine, these culturally particular connotations are different (Igwesi-Chidobe et al., 2021). For instance, the majority of US citizens are aware that smoking, eating fatty meals, and chest tightness can all increase the risk of having a heart attack. Cambodians, on the other hand, frequently exhibit a variety of anxiety-related symptoms that are rooted in worries about altered "inner wind" and blood flow (Kelly et al., 2022). The term "wind assaults" for these occurrences is one of the cultural expressions for anguish (DSM-5). There are several potential explanations for these occurrences, including stress, anxiety, fear, exhaustion, inadequate sleep, and standing up. For instance, Cambodians think that coolness in the feet and hands signals inadequate blood circulation, and that stiffness and pain in the legs, particularly around the knees and elbows, occur from obstruction of “tubes” that convey blood and “wind” down the limbs. This is believed to have a number of catastrophic occurrences that are foreshadowed by what are known as anxiety symptoms in the West (Kelly et al., 2022).

Every culture is likely to influence how anxiety disorders are expressed. For instance, in traditional Chinese medicine, organ malfunction, such as a “weak kidney” or a “weak heart,” is primarily diagnosed for anxious symptoms (Fürst, 2021). The kidney is thought to produce marrow, which feeds the brain. People who believe that their anxiety symptoms are caused by a “weak heart” will be more watchful for cardiac symptoms like tinnitus, dizziness, and blurred vision. In addition, a lot of Chinese patients think that their kidney and marrow deficiencies would result in back discomfort. These examples show how culturally unique beliefs about body function, which are influenced by ethno-psychology and ethno-physiology, shape, modify, and even dictate the symptoms of anxiety disorders (Fürst, 2021; Kelly et al., 2022).

2.6.3 Anxiety in emerging adults

Since Arnett initially made the case for emerging adulthood being recognized as a unique developmental stage, this idea has gained more and more traction (2000). Parents, teachers, clinicians, and researchers are noticing an increasing number of emerging people who struggle to fulfill developmental milestones and make the transition into adulthood while the body of knowledge on normative development during this time period expands quickly. Although the degrees of impairment and diagnostic presentations of these developing persons may differ substantially, anxiety commonly impedes their successful transition into adulthood. Emerging adults are defined as those between the ages of 18 and 29, according to the National Center for Health Statistics. Adults aged 18 to 29 had the largest percentage of symptoms of anxiety and depression (21.0%), followed by those aged 45 to 64 (18.4%) and those aged 65 and above (18.4%), and finally those aged 30-44 (16.8%; Vahratian et al., 2021). Identity, instability, being self-focused, feeling in-between, and new possibilities are the five main challenges that emerging adults face. Uncertainty over one's identity and feeling like a child while being expected to behave and perform like an adult undoubtedly belong to this. There is widespread impact of anxiety disorders during emerging adulthood and the scarcity of developmentally appropriate evidence-based interventions for anxiety during this period.

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2.7 Interventions for Anxiety

Anxiety may feel overwhelming and all-consuming, but there are both psychotherapy and medication to treat the symptoms as well as Lifestyle modifications and alternative options so that the individual can feel better. The most common treatment methods for anxiety include:

(a) Psychotherapy: Anxiety, sadness, and other emotional problems or mental diseases can be treated through psychotherapy, sometimes known as talk therapy. It is reported that roughly 75% of those who undergo talk therapy get some kind of benefit from it (WHO, 2022). In most cases, it entails the client and a therapist, counselor, social worker, psychologist, or psychiatrist cooperating to lessen or get rid of distressing symptoms that could be interfering with everyday living. There are many different psychotherapy options available to therapists, but some are more appropriate for certain problems like anxiety. While every therapist has their own techniques, the following are a few that are suggested for treating anxiety: Behavioral Cognitive Therapy (CBT). Psychodynamic treatment, Mindfulness-Based Therapy, Acceptance and Commitment Therapy, and Exposure Therapy.

(b) **Medications:** First-line pharmacological therapies for anxiety include both antidepressants and anti-anxiety drugs. They can be divided into the following groups:

a. Benzodiazepines include Ativan, Valium, and Xanax (alprazolam) (lorazepam).
b. Inhibitors of selective serotonin reuptake (SSRIs). This group of medications consists of fluoxetine, lexapro, and sertraline. Tricyclics
c. Clomipramine (Anafranil) and imipramine are examples of tricyclics (Tofranil).
d. Diazepines. inhibitors of monoamine oxidase (MAOIs). including phenelzine (Nardil), isocarboxazid, and tranylcypromine (Parnate).
e. Beta-blockers: Metoprolol tartrate and propranolol are examples of beta-blockers (Lopressor).

(c) **Mindfulness:** The application of meditation approaches in the management of mental health disorders have become very common among mental health therapist (Vidic, 2021). The practice of mindfulness meditation enables one to respond consciously and reflectively, rather than react automatically to internal or external events. It is operationally defined as the quality of consciousness or awareness that arises through intentionally attending to present moment experience in a non- judgmental and accepting way (Kabat-Zinn, 2003).

2.8 Mindfulness

Mindfulness is a mental skill that involves sustaining meta-awareness on the contents of one's own mind (Kabat-Zinn, 2013). The contents of one's own mind include sensations, thoughts, emotions, perceptions, etc. Simply stated, mindfulness is living in the present moment, being more aware and fully engaged in what is happening in and around you. While people attribute mindfulness to eastern religions, it is a concept that exists in all major world religions. It consists of being intensely

aware of what one is sensing and feeling in the moment without interpretation or judgment (Baer, 2003; Kabat-Zinn, 2013). There are multiple clinical studies that have documented both physical and mental health benefits of mindfulness in children and adults with present with diverse health concerns (Goldberg et al., 2022; Paulus, 2016).

2.9 Mindfulness Based Interventions

Mindfulness Based Intervention (MBI) is considered one of the effective strategies among the self-regulatory strategies. It is a process that leads to a mental state characterized by non-judgmental awareness of the present moment experience, including one's sensations, thoughts, bodily states, consciousness, and the environment, while encouraging openness, curiosity, and acceptance. Bishop et al, (2004) distinguished two components of mindfulness, one that involves self-regulation of attention and one that involves an orientation toward the present moment characterized by curiosity, openness, and acceptance.

Mindfulness-based Interventions (MBIs) are group-based programmes of psycho education and self-help skills employed as treatment for specific maladies and also for self-care, general emotional well-being and other psychological goals. Research on mindfulness-based intervention has increased rapidly in the past decade.

Hofmann and Gomez, (2017) indicated that MBIs are effective in reducing anxiety and depression symptoms severity in a range of individuals. Currently, some of the MBIs that are being utilized in therapy include Mindfulness-based Cognitive therapy (MBCT), Dialectal Behaviour Therapy (DBT; Hays, Follette & Linehan, 2004), and Acceptance and Commitment Therapy (ACT; Hays, Vilatte, Levin & Hildebrandt, 2011; Jones-Smith, 2016).

2.9.1 History of mindfulness-based interventions

Jon Kabat-Zinn (1982) developed the Mindfulness-Based Stress Reduction (MBSR) programme which is a clinical programme to facilitate adaptation to medical illness at the University of Massachusetts (U Mass) Medical School. This intervention was developed for patients with chronic pain, harnessing the fundamentals of mindfulness meditation as taught by the Buddha, but the Buddhism taken out. The UMass Stress reduction clinic opened its doors in 1979 and taught people with chronic back pain, victims of industrial accidents, cancer patients and sometime paraplegias. Kabat-Zinn's definition of mindfulness meditation emphasizes the awareness that arises from paying attention, on purpose, in the present moment and non – judgmentally. By focusing on the breath, the idea is to cultivate attention on the body and mind as it is moment to moment, and so help with pain both physical and emotional.

TeaSDale and colleagues (2002; Ferguson, Dinh-Williams, & Segal, 2021) combine the US programme with Cognitive Behavioral Therapy (CBT) to from an eight-week mindfulness-based CBT course that was recommended in 2004 for prescription on the National Health Scheme (NHS) for recurrent depression.

2.9.2 Mindfulness modalities

The basic of the mindfulness meditation involves the following processes:

- Observing the breath (or focusing on a repeated word, a mantra) while quieting the mind of inner chatter and thoughts.
- Focus is maintained on the breath, grounding in the present moment without judging the experience as good or bad, preferred or not preferred.
- Within seconds, the mind loses focus and wanders off.

- Realize the mind has wandered off and returns to the object of focus without berating self for "failing" to focus.
- This process of focusing, losing focus, regaining focus, losing focus, regaining focus continues for an established period of time, usually 10-20 minutes.

2.9.3 Mindfulness based cognitive therapy

Mindfulness-based cognitive therapy is an 8-session group programme, initially conceived as an intervention for relapse prevention with recurrent depression, it has since been applied to various psychiatric condition.

i. Session 1: Automatic pilot. Introduce mindfulness; eating mindfulness exercise; mindfulness body scan

ii. Session 2: Dealing with barriers. Explore mental chatter using the body scan exercise.

iii. Session 3: Mindfulness of the breath. Introduce mindfulness breath focus and 3-minute breathing space exercise.

iv. Session 4: Staying present. Link mindfulness to automatic thoughts and depression.

v. Session 5: Allowing and letting be. Introduce acceptance and "allowing" things to just be.

vi. Session 6: Thoughts are not facts. Reframe thoughts as "just thoughts" and not facts.

vii. Session 7: How can I best take care of myself? Introduce specific techniques for depressive thoughts.

viii. Session 8: Using what has been learned to deal with future moods. Motivate to continue practice.

2.10 Efficacy of Mindfulness

Qualitative studies emanating from the work of Christopher and Maris (2010) have provided compelling support for the contribution of mindfulness to students' professional development. The authors studied counselling students' experiences in an elective course on the topic of self-care and mind/body medicine. This course involved regular, intensive mindfulness practice. At the end of the course, the researchers conducted a focus group interview with participants and analyzed their comments through inductive content analysis. One of the primary themes in this study pertained to participants' growing sense of clinical presence with clients. Students reported that, as a result of practicing mindfulness, they were able to focus more intently on clients during sessions and bring their full attention to the therapeutic encounter.

Multiple randomized control trials have demonstrated the effectiveness of internet-based mindfulness interventions in helping college-age students reduce their anxiety levels (Said, Lohart, & Paul, 2022; Wan et al., 2022). Furthermore, mindfulness–based intervention has been shown to be at least as effective as antidepressants in preventing relapse anxiety. Mindfulness-based interventions do not appear to be restricted to age, location, nor gender. Mindfulness-based interventions have been demonstrated to work with clients in Canada (Shamblaw & Segal, 2022), for people living with long-term conditions (Carroll et al., 2022), and in being effective in improving emotion regulation and neuro-cognitive functioning (Matthews & Anderson, 2021).

Another pertinent study conducted by Grepmair, Mitterlehner, Loew and Bachler (2007) compared the clinical outcomes of psychotherapy interns who participated in daily meditation practice (1 hour/day) to the clinical outcomes of

interns who were not engaged in meditation practice. Clients (n = 124) were randomly assigned to interns for therapeutic treatment. After a two-month mindfulness-based intervention, clients who were treated by interns utilizing meditative practices reported a greater reduction in symptoms related to somatization, insecurity, obsessiveness, anxiety, anger, and psychoticism. They also reported that the therapeutic experience was more beneficial in clarifying presenting issues and problem solving, compared to the reports of clients treated by interns who were not exposed to meditation.

Similar findings were reached in a qualitative synthesis by Fletcher, Pond, & Gardiner (2022). The focus of research was turned to students in this same course, which incorporated regular mindfulness practice. In this case, however, the researchers used inductive content analysis to examine the journal entries of participating students (n = 35) over a four-year period. The findings suggested that students experienced improvements in their clinical work as a result of practicing mindfulness. Specifically, students reported increased comfort with silence in counselling sessions, improved attention on clients and the therapeutic process during sessions, and a new appreciation for the importance of spiritual themes in counselling. In sum, there exists support for the view that mindfulness practice is related to fundamental counselling abilities.

Mindfulness deals with the overthinking and hyper vigilance of anxiety. In focusing on the concrete, tangible moment that you can notice with one's senses, mindfulness offers a break from the worries and fears of anxiety. It pulls out the worries and ruminations and allows one to neutrally notice our real moment and simply be present in it. In so doing, mindfulness fulfils its ultimate goal to give back one's life. Mindfulness seems to have the ability to reduce all types of anxiety

symptoms. Clinical researchers have increasingly studied MBIs with more rigorous methodology, allowing for meaningful conclusions to be drawn from the present body of work.

Reviews of well-designed, randomized controlled trials comparing mindfulness treatments (primarily MBSR and MBCT) to active control conditions indicate that MBIs are effective in treating a broad range of outcomes among diverse populations. These outcomes include clinical disorders and symptoms such as anxiety, risk of relapse for depression, current depressive symptoms, stress, medical and well-being outcomes such as chronic pain, quality of life, and psychological or emotional distress. Additionally, MBIs have been shown to work through changes in specific aspects of psychopathology, such as cognitive biases, affective dysregulation, and interpersonal effectiveness.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The methodology section will address the philosophy, research paradigm, research approach, and research design. Finally, I will address the ethical considerations connected to this study.

3.1 Research Paradigm

Due to the diverse approaches involved in educational research, scholars need to understand the nature of knowledge and the processes we go through to acquire this knowledge (Bryman, 2015; Gall, Gall, & Borg, 2007). Research paradigm can be described as a philosophical framework upon which research stands. Research paradigm provides a model of core beliefs from which the theories and practices of the research project function (Bryman, 2015). A research paradigm consists of ontology, epistemology, and methodology (Bryman, 2015; Gall et al., 2007).

3.1.1 Ontology

My ontological stance is realism, and this lens drives the research (Bryman, 2015; Moon & Blackman, 2014). Ontology seeks to answer, "what is reality?" It is the 'study of being', and how to gain knowledge about what actually exists in the world (Moon & Blackman, 2014). According to Moon and Blackman (2014), ontology deals with the truth claims that a researcher can make about reality, specifically, how researchers deal with different and conflicting ideas of reality. Moon and Blackman have depicted this succinctly in a diagrammatic form for easy understanding (see Figure 2).

Naïve realism	Structural Realism	Critical Realism	Bounded Relativism	Relativism
Reality can be understood using appropriate methods	Reality can be described by scientific theory, but its underlying nature remains uncertain	Reality captured by broad critical examination	Mental constructions on reality are equal in space and time within boundaries (e.g., cultural, moral, cognitive)	Realities exist as multiple, intangible mental constructions; no reality beyond subjects.

Figure 2: Ontological perspectives

3.1.2 Epistemology

My epistemological stance is objectivism. Epistemology deals with the study of knowledge, specifically, what constitutes a knowledge claim, how can knowledge be acquire, and how can its transferability be assessed (Moon & Blackman, 2014). Epistemology answers the question, "how is it possible to know reality?" Epistemology influences how researchers frame their research in their quest to discover knowledge (Figure 3).

Objectivism	Constructionism	Subjectivism
Meaning exists within an object: an objective reality exists in an object independent of the subject	Meaning created from interplay between the subject and object: subject *constructs* reality of object	Meaning exists within the subject: subject imposes meaning on an object

Figure 3: Epistemological outlooks

3.1.3 Theoretical perspective

Theoretical perspectives address the philosophical orientation of the research that guides their research. Specifically, does the researcher subscribe to the notion that knowledge acquisition is deductive, 'value-free', and capable of being generalizable?

The other end of the continuum for the theoretical perspective is that knowledge acquisition is inductive, value-laden, and contextually unique (Moon & Blackman, 2014). Theoretical perspective's ability to predict can be classified as *positivism*, *post-positivism*, and *structuralism*. Positivism is grounded in natural science methods and can be applied to social sciences. In positivism, one sees researchers observe and attempt to derive logical truths. Some scholars believe in the objective reality of acquiring knowledge and can observe reality objectively and devoid of bias. These scholars subscribe to the positivist epistemology which posits that "physical and social reality is independent of those who observe it" (Gall et al., 2007, p. 16).

However, because of some inherent weaknesses of this epistemology, there has been a modified version called 'post-positivism'. Post-positivism admits that though there can be an objective reality, "this reality can only be known imperfectly" (Gall et al., 2007; p. 16). Post-positivism is founded on the idea that multiple methods are necessary to identify a valid belief because all methods are imperfect.

A third theoretical perspective is *structuralism* that believes that the source of meaning comes from the formal structure found in language and can be applied to all aspects of human culture (Moon & Black, 2014). Structuralists ascribe to the notion that social reality cannot be objectively acquired, but the people involved in it construct this reality as they feel it and experience it (Bryman, 2015; Gall et al., 2007). Thus, a researcher has implicit or explicit bias in gaining knowledge. This is seen when researchers construct knowledge about participants and participants construct knowledge about researchers.

My stance as a researcher is *positivist* because I believe anxiety and mindfulness can be objectively measured with valid and reliable instruments. Multiple instruments that have been objectively validated and reported

to be reliable were used to assess anxiety and mindfulness in participants at pre-test and again at post-test. I believe these objective numbers will allow other researchers to understand the level of anxiety and mindfulness at baseline and after intervention. Moreover, participants' perceived stress and consequent anxiety scores will elicit a similar level of concern for any practicing counselling psychologists and inform them on how to help these emerging adults.

3.2 Research Approach

The study will use a quantitative approach (Field, 2018; Hahs-Vaughn & Lomax, 2020). Qualitative research focuses on testing theories and hypothesis analyzed through mathematics and statistics which are mainly expressed in numbers, graphs, and tables. However, qualitative research is used to understand concepts, thoughts or experiences analyzed by summarizing, categorizing, and interpreting expressed in words.

3.3 Research Design

Because I wanted to assess the effect of an intervention on the anxiety level of emerging adults, the pretest-posttest randomized control group design was used (Field, 2013; Hahs-Vaughn & Lomax, 2020; Patten & Newhart, 2018). Figure 4 explains the design. The purpose of an experimental design is to assess cause-and-effect relationships (Patten & Newhart, 2018; Shadish, Cook, & Campbell, 2001). To effectively explore this cause-and-effect relationship, studies have to be designed with a pretest and a post-test to determine if the intervention is actually causing a gain score.

Assign participants at random to groups				
	Group A: (Experimental Group)	Pretest	Experimental Treatment	Posttest
	Group B: (Control Group)	Pretest	Control Condition	Posttest

Figure 4: Pretest-posttest randomized control group design

Source: Patten & Newhart, 2018

The strength in using a pretest is that it allows researchers to examine how much each group has gained, and not just whether they are different at the end of the experiment.

3.3.1 Random assignment

To minimize bias, participants were randomly assigned to either control (wait-list) group or experimental group. This was to ensure that any gains made from the experimental group was attributable to only the treatment (intervention) applied. The processes for experimental designs are structured to address the issue of fidelity unique to experimental designs.

All participants were given a code. The codes were placed in a random assignment generator and the selection was made to prevent researcher influence on who went into control and who went into experimental. (https://randomlyrandom.com/randomnumber#!numbers=35&low=1&high=70&unique=true&csv=undefined&oddeven=undefined&start=false&oddqty=0&sorted=false) The researcher's supervisor took all the codes assigned to each participant and run them through the random number generator. She thereafter gave the new list to one of

the two trained research assistants to appropriately communicate the grouping to participants.

3.3.2 Research assistants

Two research assistants were trained by the Supervisor to provide the necessary support to the research in terms of blind assignment of participants to control and experimental groups. One of the research assistants to trained to provide direct support to the researcher in terms of contact with participants. The other research assistant was trained in data entry to ensure assigned code names were consistent with completion of research instruments. Both research assistants had completed their tertiary education.

3.3.3 Pilot testing

Pilot testing involved 20 emerging adults who were equally divided into control and experimental groups. Pilot testing was done online. Each week, participants were taken through one mindfulness intervention on a Sunday. On the WedneSDay, participants met again with the researchers where they shared their experience with practicing the exercise. This went on till all the four exercises had been taught. Participants in the course of the week also had an opportunity to share their narratives on a shared WhatsApp platform of how they had been experiencing the mindfulness exercises. During the pilot testing, the first research assistant coordinated providing data for participants to join the online Mindfulness training. She also checked up on them to make sure they had completed the instruments effectively.

3.3.4 Threats to internal validity

Due to the uniqueness of experimental designs, vis-à-vis other quantitative designs, aspects like internal validity issues have to be addressed differently. Threats to internal validity are those changes that occur in an experiment which have some other explanation apart from just the intervention. According to Patten and Newhart, "all threats to internal validity can be overcome by using a true experimental design" (2018, p. 187).

There are several threats to internal validity that experts address in experimental designs (e.g., Patten & Newhart, 2018; Shadish et al., 2001). Threats to internal validity include history; maturation; instrumentation; testing; statistical regression; selection; and mortality. This study will however focus on only three – mortality, selection, and instrumentation.

Mortality occurs when participants in experimental study drop out between the pretest period and the posttest period. Mortality inevitably leads to a statistical change in the average not resulting from the treatment. Participants drop out during an experiment due to many possible reasons. The outcomes are thus unknown for these individuals. Individuals may fail to complete observations for a variety of reasons including illness and time commitment (Gall et al, 2007) One way to account for attrition or mortality is to try to recruit more than the minimum required (Creswell, 2014) Incentives were also used to reduce attrition (Dillman et al, 2014; Gall et al, 2017) Participants were provided with Ball Pens at the start of the study and another at the end of culmination of the group. Further, water was provided at each group meeting.

The threat of selection occurs when the two groups are not randomly assigned to control and experimental groups. When this happens, it skews the foundation

because it means the two groups are not initially the same in all important aspects. The researcher selected participants randomly through random selection generator under the supervision of the supervisor who used the research assistant at the blind side of the researcher. As a result, their characteristics are equally distributed among the experimental and control groups.

The final threat is instrumentation. Instrumentation occurs when there are changes in the measurement procedure from the time it was used at pretest to the time it was used at posttest. For example, participants may pay more attention to the items in the instrument at one assessment more than another. When this happens, answers change and results provide inconsistent responses. The researcher used the same instrument for the pre-test and post-test measures. In order to account for the threats to instrumentation validity, measures were not altered during the study. The same measurements were utilized at each observation point.

3.4 Population

There is no known data on adults in Ghana struggling with anxiety. The International Journal of Mental Health (2015/2016) estimated the number of people in Ghana projected to receive treatment for anxiety disorder within the cases identified is estimated to be about 11,362 and projected that about 30% (3,409) of those who receive treatment will remain on antidepressants for life. However, according to the National Institute of Mental Health (2020) and the World Health Organization (WHO, 2020), about 40 million adults in the United States aged 18 years and older struggle with anxiety disorders, the most common mental illness in the US. The same organizations report that 18.1% of the population suffer from anxiety disorders yearly. If we are to use the same percentage, then we can estimate that of the 18,354,323-adult population in Ghana, 3,322,132 (18.1% of 18,354,323) struggles with anxiety-

related illnesses (CIA World Factbook, 2020). However, if our population is all emerging adults at the second and vocational level, then the number will be vastly reduced.

3.5 Sample Size

To establish an appropriate sample size needed to compute requisite effect size (Cohen, 1988), the G*Power software (Faul, Erdfelder, Lang, & Buchner, 2007) was used to compute the sample size. As a tool to compute statistical power analyses for multiple tests, G*Power can also compute effect sizes and display graphically the results of power analyses (see figure 5).

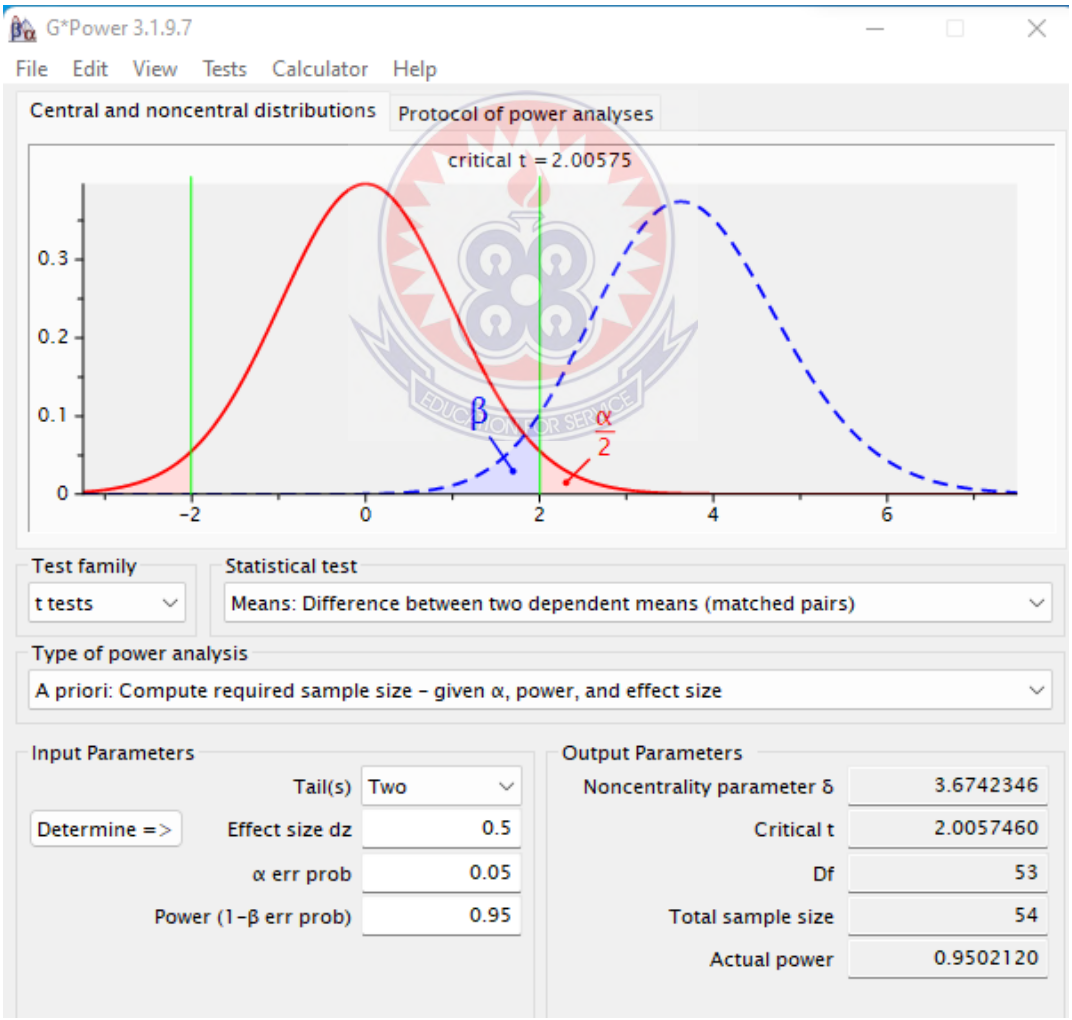

Figure 5: G*power A priori analysis for pretest-posttest protocol

With an estimated alpha set at .05, and effect size determined at large effect (0.5; Cohen 1988), the actual sample size was determined at 54. However, because of threats to internal validity known in experimental studies (e.g., history, maturation, testing; Patten & Newhart, 2018), the sample size was increased to 70 participants.

3.6 Sampling Techniques and Procedure

Initial sampling for this study was *purposive* sampling (Gall et al., 2007; Patten & Newhart, 2018) because participants were people who were part of clusters of schools under my jurisdiction as a Guidance and Counselling Coordinator. Participants were purposively sampled because they fit the inclusion criteria of being emerging adults in a formal educational setting. Study invitation adverts were sent to the schools. Interested volunteers contacted the researcher through their counsellors and underwent eligibility screening by researcher and team of assistants. Qualified participants were randomly selected for the control and experimental groups using random number generators (Shadish et al., 2001).

3.7 Instrumentation

Two instruments and a demographic questionnaire were used in this study. To understand anxiety levels, the Worry and Tension Scale (Acquaye, 2020) was adopted. To assess participants' mindfulness, the Mindful Awareness Attention Scale (MAAS, Brown & Ryan, 2003) was adopted. Thus, both instruments were used without changing any part of the wording or the structure.

The Worry and Tension Scale (WATS; Acquaye, 2020) is a 10-item self-report Likert-type scale that assesses participants' level of anxious thoughts in the past week. Answer prompts in the instrument range from "Strongly disagree" (1) to "Strongly Agree" (4). The instrument was developed as part of a study exploring anxiety and

Christians' perception of assurance of salvation. Sample statements include "I experience muscle tension because I feel on edge", and "I worry so much it leaves me fatigued." The total score could range from a low of 10 to a high of 50. The instrument was originally normed on a combined sample of North Americans living in the pacific northwestern part of the US, Ghanaians living in the US, and Ghanaians living in Ghana. The internal reliability of the items was very strong (α = .90; *n* = 105) on the normed sample. In a recent study that assessed anxiety among charismatic Christians in northern Ghana, Obeng (2022) used the WATS and reported a very high Cronbach's alpha (α = .951) for his participants in a cross-sectional study.

The internal consistency of the WATS for the pilot study of this current research was high at pre-test (α = .96; Cohen, 1988) and acceptable at post-test (α = .74; Cohen, 1988). For the actual study, the internal consistency was high (α = .89; *n* = 70) at pre-test and very high at post-test (α = .95; *n* = 70). These results confirm Obeng's results that the WATS is a good instrument to use in assessing anxiety among Ghanaians.

The total average for the normed sample was 25.60 and the WATS mean score was 2.56. However, the scores were higher for the northern Ghanaian sample. The total average for the northern Ghanaian sample was 26.84 and the WATS mean score was 2.68. Because the latter is more aligned with the sample for this study, I chose to use the mean score to establish anxiety levels of participants.

The Mindful Attention Awareness Scale (MAAS, Brown & Ryan, 2003) was originally created to assess people's receptive awareness of what is taking place in the here and now. This 15-item scale assesses dispositional mindfulness. The scale also assesses people's attention to what is taking place in the moment. Receptive

awareness and attentiveness to the here and now are core characteristics of dispositional mindfulness.

To keep dispositional mindfulness as a neutral construct, the instrument developers intentionally excluded mood, attitude, and motivation – traits that could skew the neutrality of the instrument (Brown & Ryan, 2003). This scale intentionally excludes mood, attitude, and motivation to keep dispositional mindfulness neutral as a construct. The MAAS measures one's tendency toward mindfulness or mindlessness. Scores of the MAAS strongly correlate with self-consciousness, rumination, and self-reflection. Those scoring higher in mindfulness tend to report higher levels of pleasant affect, higher self-esteem, optimism, and self-actualization (Carlson & Brown, 2005). Also, lower levels of neuroticism, anxiety, depression, and unpleasant affect are reported in those scoring higher in mindfulness.

Research indicates that the scale demonstrates strong validity in college, community, and cancer patient samples (Bhambhani & Cabral, 2016; Bowen & Enkema, 2014; Murphy, Mermelstein, Edwards, & Gdycz, 2012). Psychometrically, the MAAS assesses traits of consciousness related to self-regulation and wellbeing. Scores of the MAAS strongly correlate with self-consciousness, rumination, and self-reflection. The instrument takes 10 minutes or less to complete. To score the MAAS, a mean of the 15-items is calculated. Those scoring higher in mindfulness tend to report higher levels of pleasant affect, higher self-esteem, optimism, and self-actualization. Also, lower levels of neuroticism, anxiety, depression, and unpleasant affect are reported in those scoring higher in mindfulness. This instrument was not part of the pilot study. Internal consistency for this experimental study was high ($\alpha = .83$; $n = 70$) at pre-test and very high at post-test ($\alpha = .93$; $n = 70$). Several studies have used MAAS to understand clients' ability to be mindful. For example, undergraduate

students (n = 90) had a total average score of 57.75 with a MAAS mean score of 3.85. Zen meditators (n = 42) had a total average score of 65.7 with a MAAS mean score of 4.38. Finally, clients battling cancer (n = 58) had an average score of 64.05 with a MAAS mean score of 4.27. Thus, Zen meditators, people who actively take part in mindfulness practices, unsurprisingly, had higher scores than those who do not. Thus, for this group, because the group closest to this study's participants are undergraduate students, I chose to use the undergraduate numbers to establish the level of mindfulness in this study sample.

The demographic questionnaire, based on similar studies, served to elicit information about participants' daily life. Questions posed included gender, age, level in educational training. Other questions also tapped into their family dynamics by asking what their birth order was. Finally, there was a question that addressed the kind of romantic relationship participants were engaged in, or lack thereof.

3.8 Ethical Considerations for the Study

Ethics in counselling and research require that we recognize the basic rights of humans. It is important that we respect clients and participants' rights to autonomy, while activating our own principles of beneficence and justice (Remley & Herlihy, 2016). I observed the following key ethical protocols:

3.8.1 Informed consent

I gained approval from the department. Thereafter, I informed participants about the research through their school counsellors. I ensured informed consent was voluntary and that participants could pull out of the study without victimization.

3.8.2 Confidentiality and privacy

I did not ask participants to provide their names nor any identifying information to protect their privacy. Moreover, I kept the data digitally under multiple layers of password protection to ensure confidentiality for participants.

3.8.3 Incentives

At the pilot study, the total participants of twenty were provided with data to access the internet for the online mindfulness exercises according to their respective groups. In the actual study, participants were provided with a bottle of drinking water at every session and two pens each for all participants. Researchers are cautioned about the ethics behind the giving of incentives during research (Resnik, 2015; Zutlevics, 2016) as they could end up being self-defeating. However, both past and current studies confirm that for some unique populations, incentives may enhance participation in research (Acquaye, 2016; Yancey, Ortega, & Kumanyika, 2006). This allows their voices to be heard in narratives that have previously kept their 'voices' out of national, economical, and mental health discourses.

3.9 Steps Involved in the Intervention – What Actually Happened

After permission had been sought and given from the appropriate authorities, the researcher was introduced to the students.

(a) Pre-intervention session 1 - Students names written and codes assigned to them. The researcher's supervisor keeps both names and codes.

(b) Pre-intervention session 2 - Anxiety assessment conducted; students use codes assigned.

(c) Pre-intervention session 3 - Anxiety assessment scored by researcher and supervisor. Supervisor keeps names and codes and gives researcher only the codes to work with in the experimental study.

(d) Pre-intervention session 4 - Students randomly assigned to experimental and control group based on those whose anxiety scores were above the cut-off point.

(e) Intervention phase 1 - Students in both experimental and control group given mindfulness assessments; students use only their codes.

(f) Intervention phase 2 - Experiment sessions 1& 2

(g) Intervention phase 3 - Experiment sessions 3 & 4

(h) Intervention phase 4 - Experiment sessions 5 & 6

(i) Intervention phase 5 - Experiment sessions 7 & 8

(j) Post-intervention session 5 - Mindfulness and Anxiety post-test assessments

(k) Post-intervention session 6 - Analysis of scores to establish if intervention made a difference in anxiety and mindfulness.

(l) Post-intervention session 7 - According to ethical mandate for experimental designs, because of the experiment's ability to reduce anxiety, those in the control group were also given the intervention to provide therapeutic healing.

3.10 Data Analytic Procedure

Raw data was entered into SPSS (v25). Frequencies and percentages were used to understand the demographic information. Reliability analyses were performed to ensure that the instruments used in this sample, both at the pilot testing and the actual study, were reliable. Cronbach's alpha was the index used to measure reliability, and Cohen's (1988) index was used as a measure of classification (i.e., acceptable; strong; very strong).

A combination of t-tests and analysis of co-variance were used to assess differences and similarities between the control (wait-list) group and the experimental groups. Analysis of co-variances became useful to ensure that the changes occurring were not the results of differences before the intervention. Therefore, to control for factors which could not be randomized (e.g., age measured on a continuous variable; pretest scores; Field, 2018; Hahs-Vaughn & Lomax, 2020). Finally, Cohen's *d* was used as a measure of effect sizes. The convention proposed by Cohen (1998) are: 0.2 (small effect); 0.5 (moderate effect); and 0.8 (large effect).

CHAPTER FOUR

LIMITATIONS, RESULTS, AND FINDINGS

4.0 Introduction

This chapter provides results for the data collected. The chapter addresses the limitations that emanated from the conduct of this research. The chapter further explored the analysis, the results, and connected the findings to literature in the form of discussion.

4.1 Limitations

Multiple limitations occurred in this study. First, even though randomized control trials are the golden standard for psychological based research (Balkin & Kleist, 2017; Patten & Newhart, 2018; Shadish et al., 2001), they have their inherent weaknesses. Despite the strength in pre-testing, there are times participants become sensitized to the experimental treatment. What this means is that participants may have an overview of the expectations in the pre-testing. Therefore, changes observed in the experimental group may be the effect of a combination of the pre-test and the treatment. This is called "pretest sensitization or reactive effect of testing" (Patten &Newhart, p. 184).

This study could have either used the posttest-only randomized control group design or a combination of both called the "Solomon randomized four-group design" (Patten & Newhart, p. 184). It is recommended that any future researchers who want to replicate this study use the post-test only design and compare the results with this current study. Finally, other researchers can use the Solomon randomized four-group design to offset the reactive effect of testing.

4.2 Results for Pilot Testing

Results of the pilot testing were a preliminary analysis to explore what would work and what needed to be changed. The pilot testing was precursor to the actual study. The theoretical framework grounded the study of the 20 participants who were part of the pilot study.

The pilot study was a fully digital study where participants were given data to join the experimental training. Prior to the exercise, participants in both control and experimental groups completed the Worry and Tension Scale (WATS; Acquaye, 2020) and the Beck's Anxiety Inventory (BAI; Beck et al, 1988). Even though there were equal number of participants in both experimental and control groups, because of non-response items and mortality, only four participants' scores were included by the statistical analyses. This had the tendency of skewing the results.

According to Table 4.1, at pre-test, anxiety level of participants in the experimental group was higher ($\bar{x}$ = 28.30; *SD* = 11. 12; *n* = 10) than those in the control group ($\bar{x}$ = 18.50; *SD* = 7.72; *n* = 4). There was no statistically significant mean difference [*t*(12) = -1.59; *p* = .14] in anxiety based on class (experiment / control). This means at pre-test, both groups were equal in anxiety levels.

Table 1: Descriptive statistics of anxiety measured by wats

	Class	Mean	Std. Deviation	N
AllWATS_pre	Control	18.50	7.724	4
	Experimental	28.30	11.116	10
	Total	**25.50**	**10.974**	**14**
AllWATSpost	Control	30.75	4.031	4
	Experimental	23.30	5.122	10
	Total	**25.43**	**5.840**	**14**

After the 8-session mindfulness exercises, there was a statistically significant mean differences, $t(16) = 3.24$, $p = .005$ in anxiety. Participants in the experimental group had reduced anxiety levels ($\bar{x} = 23.30$; $SD = 5.12$; $n = 10$) than those in the control group ($\bar{x} = 30.75$; $SD = 4.46$; $n = 8$). It is interesting to note that between pre-test and post-test, participants in the control group had higher anxiety scores than their original scores. Unfortunately, because data was analyzed after the pilot testing, there was no opportunity to probe into this occurrence.

Even though this was not a mixed-methods study, participants in the pilot study were given a chance during the mid-exercise session to share their experiences. The narratives were placed in a word cloud.

Figure 6: Word cloud of pilot participants' mindfulness experiences

Some of the narratives are as follows:

> I actually tried another this morning. My group and I are on our way to talk to a school about IT and how it has improved our life's. As the leader of the group, I felt a little nervous when I woke up but I started doing the breathing and we are yet to reach there but I feel I am ok now and confident I can give my speech. (18-year- old male participant in one of the public universities in Ghana).

Another participant shared her experiences as:

> Personally, I practiced anytime not only when I'm standing but even when I was in class writing a quiz or something. So, I have been having this serious migraine for some weeks now and I took pain relief but still was not working because I would sleep and immediately, I get up it starts again. So, after I started the mindfulness deep breathing exercise, it just dropped and even though I still have the headaches it's not as bad as it was previously (20-year-old-female participant in one of the public universities in Ghana).

The Beck's Anxiety Inventory (BAI; Beck et al., 1988), another instrument to assess anxiety, was used to confirm or disconfirm the results of the pilot study. Like the earlier results from the WATS, the BAI also indicated that at pre-test, anxiety scores for control group were lower than experimental group. However, after the exercise, the anxiety level of experimental group dropped while that of the control group increased (see Table 2).

Table 2: Descriptive statistics of anxiety measured by BAI

	Class	Mean	Std. Deviation	N
AllBAI_pre	Control	28.25	7.274	4
	Experimental	37.20	12.118	10
	Total	**34.64**	**11.466**	**14**
AllBAIpost	Control	45.25	2.363	4
	Experimental	31.10	4.701	10
	Total	**35.14**	**7.784**	**14**

It appears from these numbers and the narratives of participants that the mindfulness exercises were effective in reducing anxiety symptoms of emerging adults.

To ensure that the actual study would be consistent with research in similar samples as well as well-grounded in the counselling psychology field, an expert in experimental studies in anxiety was consulted. She suggested that participants' mindfulness be measured at pre-test and post-test to ensure that not just anxiety was assessed, but mindfulness as well (verbal communication with Dr. Jacqueline Swank, Associate Professor of Counseling, University of Florida, USA on November 10, 2021). Even though both the BAI and WATS were reliable in assessing anxiety, to reduce tester fatigue (Dillman, Smyth, & Christian, 2014), the BAI was taken out at the actual study. The decision to take away the BAI and not the WATS was because some of the items in the BAI were not completely consistent with participants of black ancestry (e.g., face flushed). The WATS' items were more consistent with expression of anxiety in the Ghanaian context.

4.3 Results of Experimental Study

4.3.1 Demographic information

Participants consisted of 70 emerging adults. Of the 70 participants, six (8.6%) were male while 63 (90.0%) were female. One participant did not indicate his or her gender.

Participants' median age was 18 years ($\bar{x}$ = 18.86; *SD* = 1.52; Mode = 18 years; range = 18-24 years). The majority of the participants (60%) were in second-cycle institutions while the rest were in vocational training (see Figure 7).

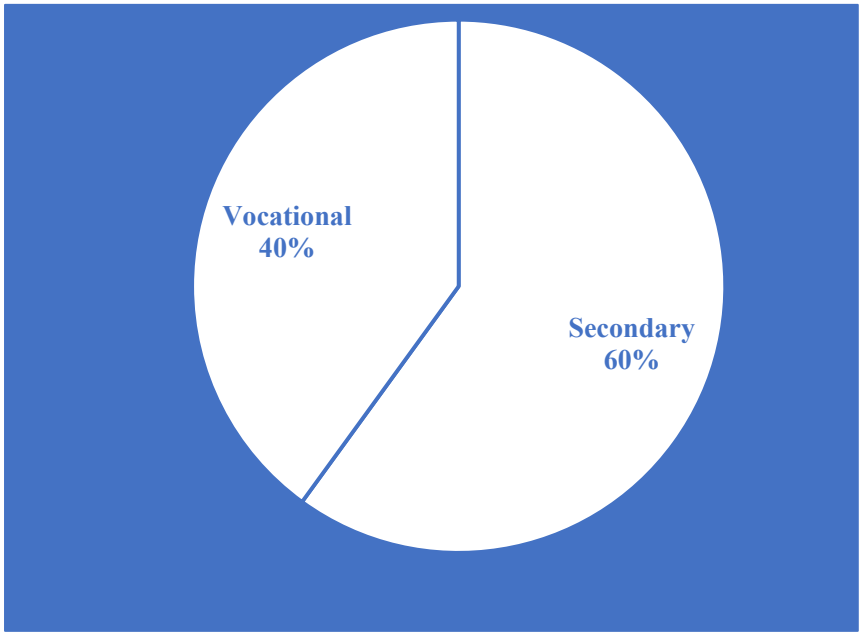

Figure 7: Pie chart of educational level of participants

Participants were at different levels of their training. The majority of them (82.9%) were in their second year of training while the least (1.4%) were in their final year (Table 3).

Table 3: Year of training

Year of Training	Frequency	Percent
First Year	9	10.0
Second Year	58	82.9
Third Year	2	2.9
Final Year	1	1.4
Total	**70**	**100.0**

Participants' religious affiliation appeared to reflect the national data, with the majority (70%) self-reporting as Christian. Three participants (4.3%) did not indicate their religious affiliation, and no respondent indicated they were traditionalist.

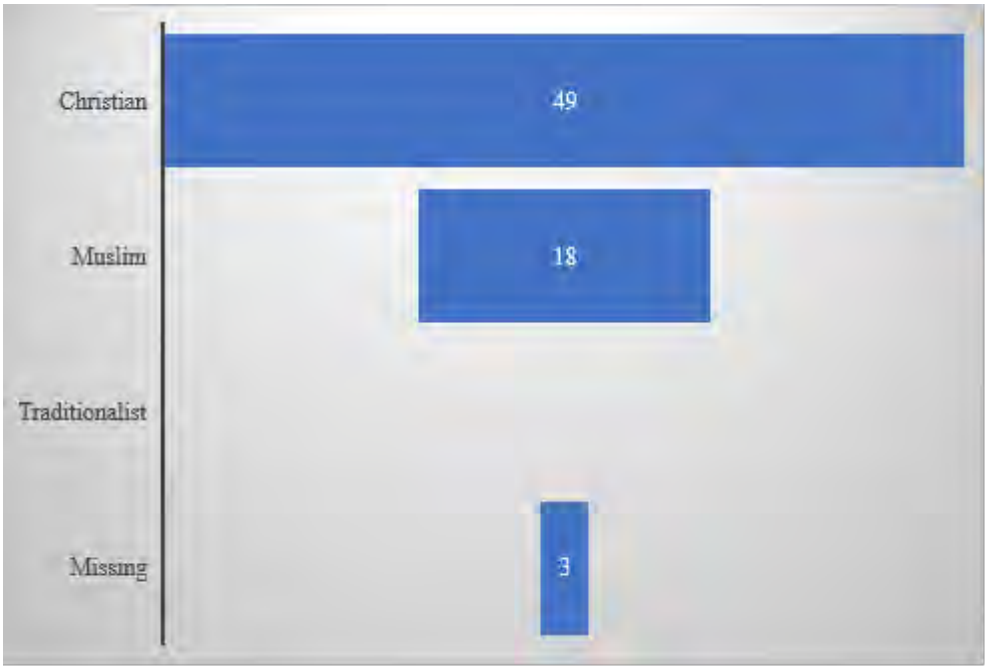

Figure 8: Religious affiliation of participants

Consistent with the literature on emerging adults, vis-à-vis Erikson's Psychosocial Theory, these emerging adults' self-report intimate relationships were varied (see Figure 9). The majority (64.3%) indicated they were single and not searching, while the minority (1.4%) indicated some version of separation either from legal separation, divorce, or widowhood. Two participants did not respond to this question.

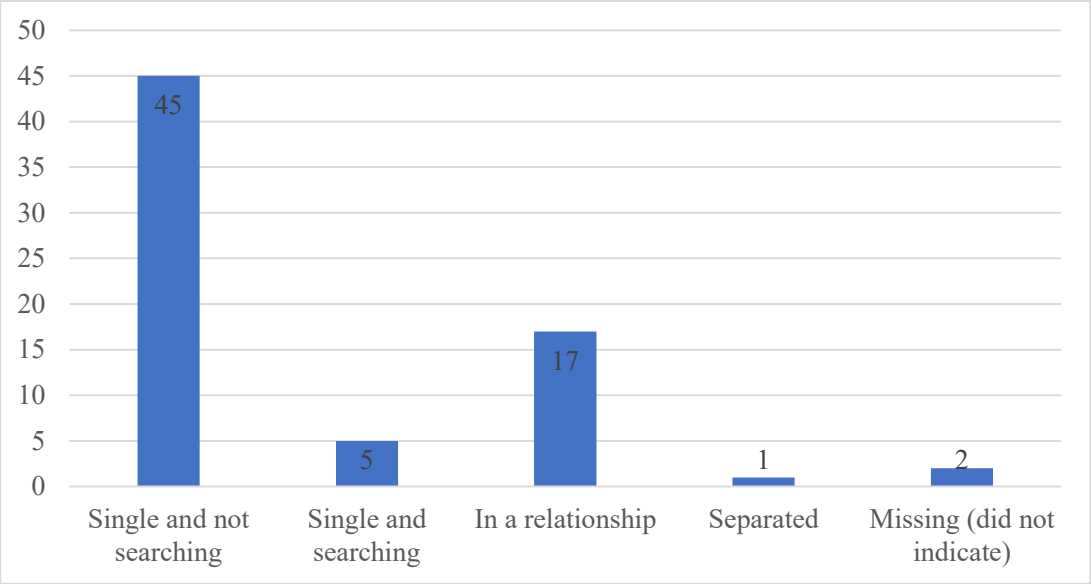

Figure 9: Intimate relationship status of participants

The intimate relationship responses appeared to be consistent with the question about residential status of participants. Fifty (71.4) indicated that they live at home with biological parents. Fifteen (21.4%) live with relatives, and four (5.7%) live by themselves. One person did not indicate their residential status.

Familial roles were equally diverse among the participants. Twenty (28.6%) indicated they were first born children. Nineteen (27.1%) indicated they were middle children. Seven (10%) reported they were either only girls or only boys, and one (1.4) indicated he or she was an only child. Twelve (17.1%) indicated they were last borns, while 10 (14.3%) reported that it was complicated because their birth order was different on the mother side and different on the father side. This last response speaks to either broken homes or blended families.

4.3.2 Research Objective 1 – pretest anxiety levels

The Obeng (2022) study of Ghanaian adults in the northern region of Ghana used the WATS to assess anxiety. Because those numbers are more aligned with this current sample, the average WATS was used as the criterion measure for comparison

with this current group. The total average for the northern Ghanaian sample was 26.84 and the WATS mean score was 2.68.

The mean anxiety score at pretest (32.50 ± 9.78) was higher than the comparison anxiety score of 26.84. Anxiety score was statistically significantly higher than the comparison anxiety score, $t(63) = 24.38$, $p < .001$. The mean anxiety score was statistically significantly higher by 29.82 (95%CI 27.38 to 32.26) than the comparison mean score of 2.68. This means that participants in this study had high anxiety and therefore needed the intervention to help them function effectively.

Table 4: One sample test of anxiety at pretest

One-Sample Test

Test Value = 2.68

	t	df	Significance One-Sided p	Significance Two-Sided p	Mean Difference	95% Confidence Interval of the Difference Lower	95% Confidence Interval of the Difference Upper
AllWATSPre	24.388	63	<.001	<.001	29.820	27.38	32.26

A standardized effect size attempts to provide a measure of the practical significance of the results. There was a large practical significance (Cohen's $d = 3.05$; Hedges' correction = 3.01).

Table 5: One sample effect sizes table of anxiety at pretest

One-Sample Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval Lower	95% Confidence Interval Upper
AllWATSPre	Cohen's d	9.782	3.049	2.461	3.631
	Hedges' correction	9.900	3.012	2.432	3.587

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation.
Hedges' correction uses the sample standard deviation, plus a correction factor.

4.3.3 Research Objective 2 – posttest anxiety levels; gender interaction

The mean anxiety score at posttest (29.45 ± 11.57) was lower than the pretest anxiety score of 32.50. Anxiety score was statistically significantly higher than the comparison anxiety score, $t(68) = 19.21$; $p < .001$. This score was however lower than the pretest score of 24.38.

Table 6: One sample test of anxiety at posttest

One-Sample Test

Test Value = 2.68

	t	df	Significance One-Sided p	Significance Two-Sided p	Mean Difference	95% Confidence Interval of the Difference Lower	95% Confidence Interval of the Difference Upper
AllWATSPost	19.212	68	<.001	<.001	26.769	23.99	29.55

There was a large practical significance (Cohen's $d = 2.31$; Hedge's correction = 2.29).

When gender was added in assessing post-test anxiety symptoms, there was no statistically significant difference ($p = .712$; $\eta^2 = .002$), indicating that anxiety levels, after intervention, were similar whether a person was female or male.

Table 7: Descriptive statistics on gender differences in anxiety

Category	Gender	Mean	SD	N
Control	Female	34.96	8.29	26
	Male	44.33	3.06	3
Experimental	Female	35.93	11.69	29
	Male	19.33	15.31	3

While the descriptive statistics showed gender differences, because these differences were not statistically significant, we cannot interpret them as so.

4.3.4 Research Objective 3 – pretest mindfulness levels

Several studies are reported to have used the MAAS to understand clients' mindfulness levels. This study chose to use the undergraduate students' (n = 90) total average score of 57.75 with a MAAS mean score of 3.85. This was because the undergraduate group (and not Zen meditators or clients struggling with cancer) is most closely aligned with the sample in this current study.

The mean mindfulness score at pretest (53.77 ± 14.04) was lower than the comparison mindfulness score of 57.75. Mindfulness score was statistically significantly lower than the comparison mindfulness score, $t(65) = 28.89$, $p < .001$. The mean mindfulness score was statistically significantly lower by 49.92 (95%CI 46.47 to 53.37) than the comparison mean score of 3.85.

Table 8: One sample test of mindfulness at pretest

One-Sample Test

Test Value = 3.85

	t	df	Significance One-Sided p	Significance Two-Sided p	Mean Difference	95% Confidence Interval of the Difference Lower	95% Confidence Interval of the Difference Upper
AllMAASPre	28.886	65	<.001	<.001	49.923	46.47	53.37

There was a large practical significance (Cohen's d = 3.56; Hedge's correction = 3.51).

4.3.5 Research Objective 4 – posttest mindfulness levels

The mean mindfulness score at posttest (58.19 ± 17.05) was higher than the pretest mindfulness score of 53.77, and higher than the comparison mindfulness level of 57.75. Mindfulness score was statistically significantly higher than both the pretest and comparison levels, $t(68) = 26.48$; $p < .001$.

Table 9: One sample test of mindfulness at posttest

One-Sample Test

Test Value = 3.85

	t	df	Significance One-Sided p	Significance Two-Sided p	Mean Difference	95% Confidence Interval of the Difference Lower	95% Confidence Interval of the Difference Upper
AllMAASPost	26.475	68	<.001	<.001	54.338	50.24	58.43

There was a large practical significance (Cohen's $d = 3.19$; Hedge's correction = 3.15).

4.4 Hypothesis Testing

Two hypotheses undergirded this study. One assessed anxiety at pretest and posttest and the other assessed mindfulness at pre-test and at post-test.

4.4.1 Anxiety at pretest and at posttest

To ensure that the changes that occurred were strictly as a result of the intervention, the pretest anxiety scores were used as a constant (covariate) in this analysis of covariance (ANCOVA) procedure. The ANCOVA analysis indicated that at posttest, anxiety scores for the experimental group were lower ($M = 24.57$; $SD = 11.87$; $n = 35$) than the control group ($M = 35.93$; $SD = 8.4$; $n = 29$). Moreover, there was a statistically significant interaction effect of classification (experimental or control) based on anxiety posttest ($F[1, 61] = 22.19$; $p \leq .001$; $\eta^2 = .27$).

Table 10: Analysis of covariance for anxiety

Experimental		**Control**		**Effect**	**F-ratio**	**df**	**η^2**
M	**SD**	**M**	**SD**				
24.57	11.87	35.93	8.40	.25	22.19	1, 61	.267

These numbers provide initial evidence that the experiment was effective in reducing anxiety symptoms in emerging adults. When anxiety scores decrease, it allows individuals to function effectively in both intra and interpersonal relationships and activities. For this experimental group, their anxiety scores had decreased below the combined posttest level (Research objective 2).

4.4.2 Mindfulness at pretest and at posttest

To assess how participants experienced mindfulness on a daily basis and after intervention, the Mindfulness Attention Awareness Scale (MAAS) was used to tap into this construct. The pretest mindfulness scores were used as a constant in this analysis of covariance (ANCOVA) procedure.

Table 11: Analysis of covariance for mindfulness

Experimental		Control			F-ratio		
M	**SD**	**M**	**SD**	**Effect**		**df**	**η^2**
65.83	16.63	49.57	13.69	.25	22.23	1, 63	.26

The ANCOVA analysis indicated that at posttest, mindfulness scores for the experimental group were higher (M = 65.83; SD = 16.63; n = 36) than the control group (M = 49.57; SD = 13.69; n = 30). Moreover, there was a statistically significant interaction effect of classification (experimental or control) based on mindfulness at posttest (F[1, 63] = 22.23; $p \leq .001$; $\eta^2 = .26$). After the mindfulness experiment, this group had mindfulness scores above (M = 65.83; SD = 16.63) the normed undergraduate mindfulness scores (M = 57.75) and even above the Zen meditators (M = 65.7) who are recognized as the golden standard for mindfulness.

4.5 Discussion of Results

Arnett (2000, 2004), the proponent of emerging adulthood pegged the age of emerging adults to 18-25 years old. To contribute to Erikson's theory, this Ghanaian emerging adult group were between 18 – 24 years old, confirming the emerging adulthood stage of Arnett as well. Thus, while Erikson's stages were normed after Caucasian clients, this study lends credence to the universality of the psychosocial stages of Erik Erikson.

Data from this study indicated that these emerging adults were in some type of formalized academic training and were involved in diverse intimately attached relationships. Arnett's supposition that during this stage, people explore various aspects of their lives including where to live, romantic relationships and career, appeared to be reflected in this current study. All the participants in this study were in some form of training – either at the secondary level or at the vocational level. Moreover, participants in the pilot study were in tertiary training (i.e., university and nursing training). Furthermore, the majority of the participants for this study lived with parents or relatives. There was quite a number of them in various types of romantic relationships, with some indicating they were single and not searching. All these responses confirm that in Ghana too, we have the concept of emerging adulthood when we consider the age, transitional decisions, and the need to have intimate connection with others.

In exploring the characteristics of emerging adults concerning anxiety, it was found that anxiety levels were high at this developmental stage, which corresponds with the pretest results of both experimental and control studies suggesting that high anxiety levels are found with emerging adults. Results of the pilot study demonstrated reduced anxiety symptoms for those who received the mindfulness

intervention than those who did not receive the mindfulness intervention. These results are consistent with several studies that affirm that mindfulness was effective in reducing anxiety symptoms (Bandelow & Michaelis, 2015; Carroll et al., 2022; Hofmann & Gomez, 2017; Matthews & Anderson, 2021; Saeid et al., 2022; Semple et al., 2010; Shamblaw & Segal, 2022).

In many of these studies, the participants, like those of this current study, had not received prior psychotherapy. For those who had received prior psychotherapy or counselling, participants had not responded to prior psychotherapy; yet mindfulness helped in reducing their anxiety symptoms. There could be multiple reasons accounting for this. It could be as a result of the transitional developmental stage and their exploration of various areas of their lives such as the decision of where to live, (e.g., with parents, with friends, with romantic partner or alone).

The high anxiety levels of emerging adults (at pretest) could be as a result of the decision of choosing a field of study during college or their right career path. This is consistent with Arnett's (2010) assertion that these changes lead to negative mental health outcomes common among them being anxiety. Exploration in love, work and world reviews can lead to disappointments and rejections which can be stressful and trigger negative emotions such as anxiety. These results are also a reflection of Erikson's theory, specifically, the stage that elicits conflict between 'intimacy' and 'isolation.' Research indicates that this stage could induce multiple anxiety-provoking symptoms as emerging adults navigate the world of intimacy and rejection from peers and romantic partners (Crowder et al., 2022). The drop in anxiety levels post-intervention could also be attributable to multiple reasons. For example, many psychological treatments such as CBT training, meditation, biofeedback, and stress management can help with anxiety disorders. However, some experts agree that the

most effective form of treatment for anxiety disorders is Cognitive Behavioral Therapy (CBT; Hays et al., 2011; Mahoney, 1974).

The study's results indicate no differences in gender based on results are consistent with some research and inconsistent with other studies. This is because while anxiety is experienced similarly across gender, females it differently than males (McLean et al., 2011). Thus, both genders experience feelings of impending danger, increased heart rate, and hyperventilation. However, for women, when they experience anxiety, they are likely to have another mental health disorder (e.g., depression, bulimia nervosa) affecting them.

In recent times, many therapists have resorted to the combination of CBT and mindfulness-based interventions or meditation (Hazlett-Stevens et al., 2019; Hoffmann & Gomez, 2017. Developing mindfulness to lower anxiety may be a novel approach in improving self-care behavior. The higher the mindfulness scores of participants, the better it is for both clients and counselling psychologists. It is reassuring to note that emerging adults could be taught mindfulness and have scores even above that of Zen meditators – a group of people known for their consistent mindful lifestyles. Results from our study highlight the importance of incorporating mindfulness-mindfulness based interventions into future counselling services and mental health therapy to improve anxiety symptoms (Kabat-Zinn, 1990, 2003). Mindfulness based interventions include exercises that focus on deep breathing and are effective in reducing anxiety, depression, and stress in various populations, but limited findings.

A meta-analysis of randomized controlled trials of mindfulness-based intervention in healthcare revealed that mindfulness significantly improved depressive symptoms, anxiety, stress, and physical functioning among a wide range of chronic

conditions in both treatment and prevention (Murphy et al., 2012; Matthews & Anderson, 2021). Authors of other studies specific to mindfulness suggest nonpharmacological interventions (mindfulness-based intervention) that increase mindfulness may also be an effective treatment option to improve quality of life, reduce psychosocial distress, and improve self-management (Strawn et al., 2016).

In conclusion, the studies reviewed consistently support our own study results that mindfulness does work! The advantage is that in a developing economy like Ghana with limited mental health resources, if clients can be empowered to use resources like deep breathing and body scanning to reduce their anxiety levels, it will reduce the workload of the limited counselling psychologists in the country. Moreover, if there is reduced burden on the health system in terms of pharmacological interventions, the country can save money that would have been used to support people struggling with anxiety. Finally, since anxiety could have debilitating effects on people, making them less productive at work and in school, economies stand at a greater chance of increasing productivity if people are encouraged and taught to use mindfulness-based exercises as the first point of call.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.0 Introduction

This chapter brings the whole work to a close. It begins with a summary of the results of the analyzed data and findings from the analysis. Thereafter, the chapter provides a conclusion of the major points. It then provides recommendations based on the significance of the study. Finally, it provides some implications for the counselling psychology profession, implications for research, and some implications for the government.

5.1 Summary of Results

The study was an experimental pretest/posttest randomized control group design that used Mindfulness-Based Cognitive Behavioral Therapy (MBCBT) to examine if anxiety symptoms in emerging adults could be reduced. It involved both pilot and actual studies. The sample population for the study were emerging adults between the ages of 18 years to 25 years. They were randomly selected from vocational, secondary, and tertiary institutions, and grouped into experimental and control (wait list) groups in both the pilot and actual studies.

In both studies, the anxiety levels of the participants were assessed longitudinally – before the intervention and again after the intervention. In the pilot study, a sample of 20 emerging adults were assessed with the WATS and the BAI to determine their anxiety levels. After random assignment into control and experimental groups, participants were taken through an 8-session MBCBT. and an 8-session mindfulness-based CBT training digitally. At the pre-test, there was no statistically

significant mean difference in anxiety based on class (experiment/control) both groups were equal in anxiety levels.

However, after the mindfulness exercises, there was a statistically significant mean difference between the experimental group and the control group. Participants in the experimental group had reduced anxiety levels than those in the control group. The pilot study was consistent with studies that confirmed that mindfulness-based interventions were effective in reducing stress in adults in a qualitative study (TeaSDale et al., 2002; 2013). It appears from these numbers and the narratives of participants that the mindfulness training was effective in reducing anxiety symptoms of emerging adults. The result of the pilot study indicated that the actual study would work accordingly.

In the actual study, 70 participants were selected for the study. At the pretest, the two groups were not equal in terms of anxiety levels. An independent samples t-test was performed to assess participants' anxiety levels. At post-test, the anxiety levels of the experimental group had dropped compared to the control group.

The mindfulness level of both groups also was assessed at pretest and posttest by an independent samples t-test. After the 8-session mindfulness-based CBT training, the mindfulness scores of the experimental group had increased than those of the control group. The higher mindfulness scores of participants further confirmed the effectiveness of the intervention on the anxiety levels of the participants.

Comparing the results of the actual study with earlier studies that used mindfulness intervention, but different methods and sample further confirmed that mindfulness-based CBT intervention is equally effective in reducing anxiety levels in emerging adults. This study is consistent with other studies that confirm the effectiveness of mindfulness-based CBT in reducing anxiety.

5.2 Conclusion

The study explored anxiety and mindfulness in emerging adults. Research indicates that the emerging adulthood stage is one buffeted by transitions and life-changing decision making (e.g., marriage, career, residential location, etc.). These emerging adults are reported to struggle with anxiety more than older adults. Moreover, research studies support their limited mindfulness states. This study used a pre-test posttest design to assess anxiety and mindfulness, apply an 8-session intervention to establish gains or losses in both anxiety and mindfulness.

After the intervention, results indicated that those in the experimental group had reduced anxiety symptoms and increased mindfulness symptoms. These anxiety symptoms had reduced below pre-test scores. Mindfulness scores had increased beyond pre-test scores. The findings also confirmed the efficacy of the eight-session MB-CBT in reducing anxiety among emerging adults (Kabat Zinn, 2003). Through mindfulness modalities, the intervention can potentially increase tolerance to anxious symptoms related to serious consequences of the various types of anxiety. Both the pilot and actual studies present an initial experiment in Ghana that warrant further controlled trials. These randomized controlled trials would hopefully validate the efficacy of MB-CBT in reducing anxiety-based symptoms in diverse adults in and out of the school system.

In spite of the limitations of this study, it can be concluded that MB-CBT is an effective intervention in reducing anxiety among emerging adults in Ghana. This confirms the assertion that mindfulness-based interventions are rated among the most promising interventions for anxiety in children, adolescents, and older adults (Hazlet-Stevens et al., 2019; Piet et al., 2010). Emerging adults can equally be added to the list of developmental stages that MB-CBT could work for.

5.3 Recommendations

Even though there has been a growing interest in mindfulness, most of the research has been conducted with adults in other cultures apart from sub-Saharan Africa. Research using mindfulness with emerging adults is lacking and more studies need to be conducted. Most of the current research has focused on pretest/posttest randomized design that focused on mindfulness-based stress reduction among other populations.

5.3.1 Recommendations for counselling psychology profession

Clients who are assessed and proven to have related anxiety symptoms would be guarded to practice MBCBT since there is empirical evidence that it is effective for reducing anxiety in emerging adults.

Guidance services in the form of group counselling would be organized for emerging adults to gain the skill of mindfulness exercise to curb the prevalent anxieties associated with that developmental stage. MBCBT would be included in the self-care therapies of counsellors to maintain a stable mental state for the counsellor.

Clients who are disposed to conditions that would trigger anxiety and occasional relapse conditions would be taught the mindfulness modalities to practice periodically to maintain a healthy mental state.

5.3.2 Recommendations for research

This study could have either used the posttest-only randomized control group design or a combination of both called the "Solomon randomized four-group design" (Patten & Newhart, p. 184). It is recommended that any future researchers who want to replicate this study use the post-test only design and compare the results with this

current study. Finally, other researchers can use the Solomon randomized four-group design to offset the reactive effect of testing.

Further, because the intervention used four different mindfulness-based modalities, there was no way of establishing which one actually worked. Future research could use each of these four as a stand-alone intervention group and compare the results to establish which specific one works for the emerging adults. As it stands, the strength of one or two may have made up for the weaknesses of one or a multiple of them.

Given the evidence that mindfulness aids in reducing anxiety in emerging adults, future research should explore how mindfulness influences coping skills. One possible explanation is that mindfulness focuses on developing and strengthening inner resources instead of fixing what appears to be wrong with the person. Researchers should endeavor to determine if mindfulness itself is a coping mechanism or if it strengthens or helps develop new skills as a mediator. Coping skills have been linked to well-being in adolescents (Chua, et al., 2014). Considering the potential link between coping skills and mindfulness the relationship between these factors should be explored.

Future research should examine mindfulness as a preventative measure for emerging adult anxiety. Thus, mindfulness could be used to reduce symptoms in emerging adults who are not diagnosed with a disorder but experiencing high levels of anxiety and are at risk of developing an anxiety disorder. There is not an established mindfulness training program for emerging adults. Thus, researchers need to monitor the development of alternative mindfulness models for various populations including emerging adults, and do comparison studies.

Finally, future researchers could use qualitative-based approaches (e.g., ethnography, narrative inquiry, grounded theory, phenomenology) to explore clients' perceptions in terms of their mind-body connections in using MB-CBT to address mood disorders. There is a growing body of research using mindfulness with children. Future researchers could explore how play-therapy could elicit responses from children who go through mindfulness exercises and how these exercises affect their emotional regulation and somatic symptoms.

5.3.3 Recommendations for policy makers

If MB-CBT could be taught people, and if MB-CBT is efficacious in reducing anxiety symptoms, then policy makers could look into investing more into counselling-related services to help people across all walks of life. Research indicates that anxiety could have a debilitating effect on people. This means it could make people ineffective in the workplace. It could also lead people to make mistakes that could cost organizations a lot of money. All these could be a drain on government's resources when people either make mistakes or are unable to work and contribute to national growth. However, if mindfulness could be used to offset all these costs to government, doesn't it make sense that government would invest in a non-medical modality that is reported to help people in all life stages?

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APPENDICES

APPENDIX A

Informed Consent

UNIVERSITY OF EDUCATION, WINNEBA

FACULTY OF EDUCATIONAL STUDIES

DEPARTMENT OF COUNSELLING PSYCHOLOGY

Principal Investigator: Gifty Sekyi-Bremansu
Faculty Supervisor: Hannah E. Acquaye, PhD

You are being invited to participate in a research study. The study is *voluntary* so you can choose to take part or not.

Purpose of the study: The purpose of this study is to find out how mindfulness-based training can help reduce anxiety symptoms in young adults.

What you will be asked to do in the study: When you take part in this study, you will be asked to complete 3 sets of questionnaires. Please note that the information obtained in this research may be used in future research. You will be asked to complete a set of demographic questions, and two sets of questionnaires about your thinking and feeling in everyday life. There should be no discomforts with any of these questions. However, if the questions trigger some unpleasant feelings, you will be directed to your school counsellor to help you process these feelings.

You will not be given any incentive in taking part of this study. Should you be part of the wait-list group, you will be given the same experimental experience should the results indicate that the experiment was effective.

Time required: We expect that you will do the questionnaire in no more than 30 minutes if it is the paper-and-pencil version, and no more than 15 minutes if it is the digital version.

Age requirement: You must be 18 years and above and be able to read and understand English at least at the class 6 level to take part in this study.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, or think the research has impacted you negatively in any way, talk to: Gifty Sekyi-Bremansu or her supervisor, Dr. Acquaye at heacquaye@uew.edu.gh.

APPENDIX B

Permission Letter

26th July, 2021.

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

LETTER OF INTRODUCTION

I write to introduce to you, GIFTY SEKYI-BREMANSU, the bearer of this letter who is a student in the Department of Educational Foundations of the University of Education, Winneba. She is reading Master of Philosophy in Counselling Psychology with index number 202121472.

She is conducting a research on the topic: EFFECT OF MINDFULNESS-BASED (CBT) ON ANXIETY IN EMERGING ADULT. This is in partial fulfillment of the requirements for the award of the above mentioned degree.

She is required to administer questionnaire to help her gather data for the said research and she has chosen to do so in your outfit.

I will be grateful if she is given permission to carry out this exercise.

Thank you.

Yours faithfully,

DR. PETER ESHUN
AG. HEAD OF DEPARTMENT

APPENDIX C

Protocol for the Experiment

Session	Activity
0	Pre-test Assessments
1	Introduction to the study Psychoeducation on anxiety Introducing mindfulness **Deep breathing** exercises
2	Exploring the practice and addressing concerns Members sharing their experiences in the use of deep breathing in between sessions Practicing again in session
3	Adding **body scanning** to the deep breathing Use of guided imagery
4	Members sharing their experiences adding body scanning to deep breathing What works and what doesn't work ● Are you sharing these experiences with someone else? ● How does it feel to share this?
5	Adding grounding exercises Practicing grounding in dyads
6	Sharing experiences on using grounding exercises with body scanning and deep breathing
7	Adding **guided imagery**
8	Termination What works and what doesn't work
9	Post-test assessments

APPENDIX D

Demographic Questionnaire

1. What is your gender?
    a. Female [ ]
    b. Male [ ]
2. How old are you (in years)? _____
3. What kind of education are you currently engaged in?
    a. Secondary school
    b. Vocational training [ ]
    c. University [ ]
    d. In between and waiting [ ]
4. What year of training/education will you classify yourself?
    a. First year [ ]
    b. Second year [ ]
    c. Third year [ ]
    d. Final year [ ]
5. What religious faith/belief do you subscribe to?
    a. Buddhist [ ]
    b. Christian [ ]
    c. Muslim [ ]
    d. Traditionalist [ ]
6. What is your residential status?
    a. Live at home with biological parents [ ]
    b. Live with relatives [ ]
    c. Live with friends [ ]
    d. Live by myself [ ]
7. How would you describe your family birth order?
    a. First born [ ]
    b. Middle child [ ]
    c. Only gender (only boy or only girl among siblings) [ ]
    d. Only child [ ]
    e. Last born [ ]

f. It is complicated because it is different on my father's side and different on mother's side [ ]

8. What is your intimate relationship like?
   a. Single and not searching [ ]
   b. Single and searching [ ]
   c. In a relationship [ ]
   d. Engaged [ ]
   e. Married [ ]
   f. Separated [ ]
   g. Divorced [ ]
   h. Widowed [ ]
9. How many dependents (people you take care of, including children) do you have?
   a. 0 [ ]
   b. 1-3 [ ]
   c. 4 and above [ ]
10. We welcome any other comments you want to put down here:

APPENDIX E

Worry and Tension Scale (Acquaye, 2020)

Please answer by ticking ( )or marking (X) ONLY ONE by reflecting on your life in the past week or two.

STATEMENT	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
I worry on many days about many things					
I find it hard to control my level of worry					
I feel restless because of the number of things on my mind					
I experience muscle tension because I feel on edge					
I find it hard to fall asleep because of the worry					
I struggle to stay asleep due to the number of things on my mind					
I worry so much I can't do what I am supposed to do					
I feel irritable because of the things on my mind					
I worry so much it leaves me tired					
I feel nervous because of the many things on my mind					

APPENDIX F

Mindfulness and Attention Awareness Scale

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

1	2	3	4	5	6
almost always	very frequently	somewhat frequently	somewhat infrequently	very infrequently	almost never

_____ 1. I could be experiencing some emotion and not be conscious of it until some time later.
_____ 2. I break or spill things because of carelessness, not paying attention, or thinking of something else.
_____ 3. I find it difficult to stay focused on what's happening in the present.
_____ 4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.
_____ 5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.
_____ 6. I forget a person's name almost as soon as I've been told it for the first time.
_____ 7. It seems I am "running on automatic," without much awareness of what I'm doing.
_____ 8. I rush through activities without being really attentive to them.
_____ 9. I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.
_____ 10. I do jobs or tasks automatically, without being aware of what I'm doing.
_____ 11. I find myself listening to someone with one ear, doing something else at the same time.
_____ 12. I drive places on 'automatic pilot' and then wonder why I went there.
_____ 13. I find myself preoccupied with the future or the past.
_____ 14. I find myself doing things without paying attention.
_____ 15. I snack without being aware that I'm eating.